



Canada Border
Services Agency

Agence des services
frontaliers du Canada



Data Analytics Initiative: Business Case

Executive Committee
July 7, 2016

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Purpose

- **Further to the Executive Committee's approval of a Data Analytics Strategy in November, 2015, this presentation:**
 - *Provides a progress report on the Data Analytics initiative.*
 - *Seeks approval of a high-level business case for investments over three fiscal years.*
- **Our vision is to transform the Agency's capacity to drive better outcomes and decisions by moving from a siloed to an enterprise approach to data analytics.**
- **In alignment with the approved Strategy, this business case seeks to leverage the Agency's existing investments in analytics and to propose a funding strategy for priority foundational initiatives.**



Strategic Objectives

The Data Analytics Strategy is strengthening the CBSA's capacity to deliver a "border of the future" that will be faster, cheaper, and more secure.

- **Securing Canada's borders**
 - Taking advantage of advanced analytics to "push the border out" and to enable interdiction of high-risk travellers and goods as early as possible in the continuum;
 - Supporting effective and integrated enforcement at ports of entry, as well as more effective inland enforcement and criminal investigations.
- **Streamlining the border experience**
 - Providing a seamless experience at the border for low risk travellers and goods, with little or no interaction with border officers.
 - Maintaining comprehensive interaction data on all travellers and goods in real-time throughout the continuum, allowing the Agency to better predict future patterns.
- **Management excellence**
 - More timely, reliable, and accessible data to support the Government's "Results and Delivery" agenda;
 - Integrated financial and operational data for resource allocation and business enhancement;
 - Secure and efficient release of datasets for Open Government. Mitigation of "Information Integrity" risks and improved data integrity for OAG audits, internal audits, and evaluations.



Data Analytics Strategy

- An integrated, enterprise approach based on increasing our maturity above industry standard over next three years.

Data Governance

- **Governance Structure.** Provide an Agency-wide approach to decision-making on data issues.
- **Stewardship.** Designate data stewards and centres of expertise, with clear roles and responsibilities.
- **Standards and policies.** Implement common definitions, data quality processes, and an enterprise data model.

Business Intelligence

- **Data Integration.** Build an integrated data warehouse, drawing on key data from multiple sources.
- **Self-service.** Enable quick access to key reports and data.
- **Competency Centre.** Create a Business Analytics Centre within ISTB for cross-functional support and coordination.

Advanced Analytics

- **Data acquisition.** Provide analysts with access to key data from internal and external sources.
- **Emerging tools and techniques.** Explore potential for predictive analytics, visualization, and other advanced tools.
- **Workforce development.** Recruit and develop high-skilled analysts.



Action Plan - High-level Roadmap

	2016-2017	2017-2018	2018-2019
Data Governance	Establish Data Governance Centre	Continue to address data integrity priorities	Ongoing data governance, quality control
	Complete Business Data Model - Phase II	Operationalize Business Data Model	Ongoing maintenance
	Launch Open Government Implementation Plan (OGIP) 2016	Release planning of data and information, OGIP 2017	Ongoing delivery of data and information, OGIP 2018
Business Intelligence	Establish Integrated Data Warehouse (IDW)	Data acquisition and service delivery	Ongoing data acquisition and service delivery
	Define requirements for Integrated Performance Reporting (IPR) tool	Seek capital investment funding, project launch	Project implementation and iterative delivery
Advanced Analytics	Expand operational analytics capacity (Targeting, Intelligence)	Implement operational analytics environment	Ongoing people management, maintenance
	Complete Program Optimization pilots	Expand data science capacity	Ongoing people management



Progress Report

Data Governance

Completed:

- ✓ Established VP-led Information Management Committee and working groups.
- ✓ Completed Data Quality Assessment with participation of all branches.
- ✓ Completed first phase of the CBSA Business Data Model.

In Progress:

- Initiated data inventory to meet 2016 Open Government Directive obligations.
- Began phase 2 of the CBSA Business Model - common Agency data concepts, definitions, and ownership.

Business Intelligence

Completed:

- ✓ Completed first phase of Integrated Data warehouse (IDW) high-level requirements.
- ✓ Transferred CMRS team to ISTB in order to build Data Services capacity.

In Progress:

- Initiated SLMF process for the Integrated Performance Reporting (IPR) initiative.
- Continue to establish Data Services functions within ISTB.

Advanced Analytics

Completed:

- ✓ Completed _____ in NTC and demonstrated business value.
- ✓ Completed first pilot of predictive analytics for traveller targeting.

In Progress:

- National Targeting Centre (NTC) and Science & Engineering in ISTB continuing to conduct pilot projects of next generation technologies.
- Several pilots underway: predictive analytics for _____ advanced statistical tools and information visualization for situational awareness.
- Working with B5 partners to develop "community of practice" on analytics.



Community of Practice

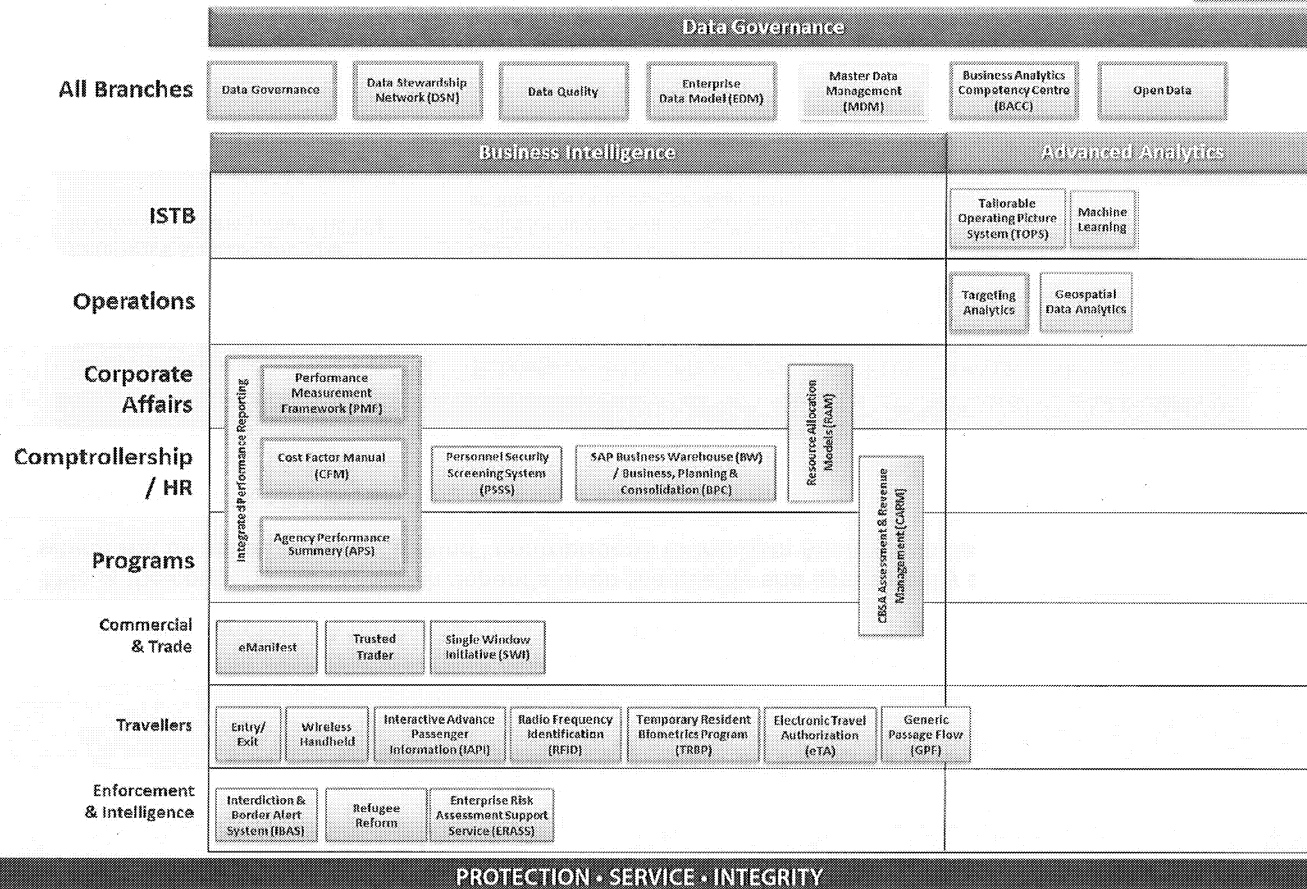
- The “Tooth to Tail exercise” identified over 225 FTEs at NHQ which support the performance reporting and analytics function. A further 50 FTEs carry out this function in the regions.
- This is the core community which depends upon the quality and accessibility of performance data, and which will be asked to make “in-kind” contributions to the Data Analytics initiative.
- Within this community, the existing centres of expertise include:

Organization	Roles	Resources
Global Border Management and Data Analytics (Programs)	“Business owner” for data services, provides leadership on data governance and integrated performance reporting	FTEs: 5 analysts, working closely on this initiative with Performance Reporting teams in Program areas
Enterprise Architecture and Information Management (ISTB)	Leads Open Data initiatives, manages intake for new analytics requirements, architecture, and service alignment	FTEs: 5 analysts, plus contractors
Science & Engineering Directorate (ISTB)	Provides advanced analytics services for program optimization, including predictive analytics and data visualization pilots	FTEs: 3 mathematicians
National Targeting Centre (Operations)	Data Analytics Unit focuses on tactical targeting analytics, leads collaboration with B5 partners on operational analytics	FTEs: 14, plus contractors
Enforcement and Intelligence (Operations).	Data Exploitation team deploys basic geospatial analytics.	FTEs: 2



Data Analytics – Related Initiatives

Potential Business Case Inputs (funding pressures)





Related initiatives (ctd)

- **Potential new funding:**
 - **Refugee Reform.** Assisted Voluntary Removal and Repatriation (AVRR) program provides an opportunity to improve the quality and accessibility of immigration enforcement data. This work, in turn, depends on a solid data analytics infrastructure. The data governance tools developed to improve detention and removal statistics, for example, will benefit other program areas as well.
 - **Entry-Exit.** A robust data stewardship capacity is required in order ensure the quality of data collected on some 97 million travellers per year. It will be essential to implement this capacity before the relevant legislative amendments take force in July 2017.
 - **Other "In-Flight" Projects.** Resources for analytics have been included in existing projects such as Master Data Management (\$10 million for identity resolution) and eManifest, which has expended approximately \$30 million for analytics and reporting infrastructure. New deployments based on this infrastructure will be released in mid-2016.
 - **Future Projects.** All future CBSA projects should clearly identify resource requests for analytics, and their alignment with the Agency's data analytics strategy, within the relevant Cabinet documents and TB submissions. Phase 3 of CARM, for example, will require a major investment in analytics and revenue generation.



Funding Strategy

Guiding principles:

- **Salary:** Minimal new requirements in short term. Use new Entry-Exit funding (\$410,000), internal reallocation, and in-kind contributions where possible (e.g. task forces). Review requirements in 2017-18.
- **O&M:** Seek \$2.3 M in contributions for this fiscal year. Provide new funding from Refugee Reform (AVRR) and Entry-Exit for foundational elements:
Funding for subsequent years to be confirmed at a later date.
- **Capital:** Complete detailed proposal this year in preparation for Investment Plan (2017-18) and Budget 2017. Funding will be used to build an Integrated Performance Reporting tool.

	2016-17	2017-18	2018-19	Total
Salary	\$0.4M	\$0.8M (TBC)	\$0.8M (TBC)	\$2.0M
O&M	\$2.3M	\$2.1M (TBC)	\$1.7M (TBC)	\$6.1M
Capital	-	\$3.0M (TBC)	\$3.0M (TBC)	\$6.0M



Data Governance

Key Requirements, 2016-17:

1. *Data Governance Centre*

- Consistent data policies and quality standards are a foundational element for both business intelligence and advanced analytics.
- This work is essential for launching the next phase of the Entry-Exit project and for improving the quality of detention and removals statistics.
- Funding is required to build a data stewardship network and resolve data integrity issues in support of the Agency's priorities.

2. *Business Data Model*

- Provides common definitions for use across the Agency's data. First two phases were completed in 2015-16 using a "tiger team" approach.
- Funding is required to provide expertise for development of the next phase of the Business Data Model. Initial focus on Immigration Enforcement and Entry-Exit.

3. *Open Government Coordination Office*

- Located in Open Government and Data Services Division, ISTB.
- Funding is required to achieve compliance with the TBS Open Government Directive, including completing the CBSA Open Government Implementation Plan 2016 and a data inventory.



Data Governance (ctd)

Initiative / Lead	2016-17	2017-18	2018-19	Total
1. Data Governance Centre (DGC) <i>Programs</i>	<ul style="list-style-type: none"> Establish Data Stewardship Network and DGC Entry Exit and Master Data governance 	<ul style="list-style-type: none"> Develop Data and Quality Control Standards Operationalize DGC 	<ul style="list-style-type: none"> Continued improvement and stabilization of services 	
	Salary: \$120,000, 3 FTEs (E/E) O&M: \$400,000 (AVRR)	Salary: \$240,000, 3 FTEs O&M: \$200,000	Salary: \$240,000, 3 FTEs O&M: \$200,000	Sal. \$600,000 O&M: \$800,000
2. CBSA Business Data Model <i>ISTB</i>	<ul style="list-style-type: none"> Initial CBSA Business Data Model complete Next phase: 	<ul style="list-style-type: none"> Operationalize CBSA Business Data Model Integration of Model into prioritization and planning of all reporting projects 	<ul style="list-style-type: none"> Ongoing operationalization and improvements 	
	O&M: \$400,000 (AVRR)	O&M: \$200,000	O&M: \$100,000	O&M: \$700,000
3. Open Government Coordination Office (OGCO) <i>ISTB</i>	<ul style="list-style-type: none"> Complete data inventory Open Government Implementation Plan (OGIP) 2016 Edition Open Data release plan and schedule 	<ul style="list-style-type: none"> Release planning of data sets Open Information release OGIP 2017 Edition 	<ul style="list-style-type: none"> Ongoing proactive release of data and information OGIP 2018 Edition 	
	O&M: \$250,000 (ISTB)	O&M: \$250,000	O&M: \$100,000	O&M: \$600,000
	Salary: \$ 120,000 O&M: \$1,050,000 Total: \$1,170,000	Salary: \$240,000 O&M: \$650,000 Total: \$890,000	Salary: \$240,000 O&M: \$400,000 Total: \$640,000	Sal: \$0.60M O&M: \$2.10M Total: \$2.70M



Business Intelligence

Key Requirements, 2016-17:

1. *Integrated Data Warehouse*

- Repository for the Agency's key data, including financial and operational data.
- Funding required to organize this data according to a service oriented architecture.

2. *Integrated Performance Reporting*

- User-friendly tool for access to the integrated data warehouse.
- Linked to replacement of obsolete "G11" data collection system.
- Sponsored by Programs, Corporate Affairs, Comptrollership.
- Funding required to prepare costing for Investment Plan (2017-18) and Budget 2017.

3. *Immigration Data*

- CBSA's immigration-related data resides in the IRCC data warehouse.
- Funding required to develop detailed plan for integration into CBSA's data warehouse.

4. *Business Analytics Competency Centre*

- Funding required to provide leadership within ISTB on analytics requirements, training, and implementation.



Business Intelligence (ctd)

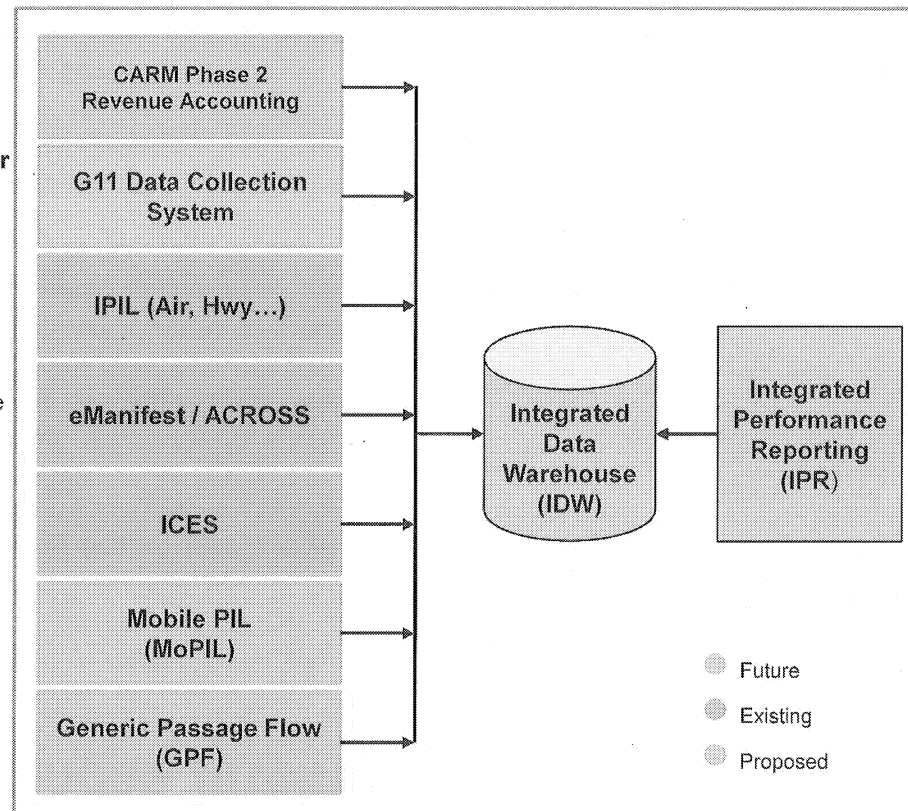
G11 system is a key “feeder system” for integrated performance reporting.

Existing G11 System:

- Built in 1988 (now “End of Life”, no changes possible).
- Only source for key data (e.g. total traveller volumes - 97M / year).
- Contains obsolete, duplicate, inaccurate data.

Potential Replacement:

- Simple “data collection app”.
- Facilitates consistent data entry and timely updates.
- Provides cost avoidance at POEs (less manual collection).





Business Intelligence (ctd)

Initiative / Lead	2016-17	2017-18	2018-19	Total
1. Integrated Data Warehouse <i>ISTB</i>	<ul style="list-style-type: none"> Data architecture design based on common data requirements from inflight projects Establish service oriented integrated data service delivery Initial focus on immigration enforcement data 	<ul style="list-style-type: none"> Iterative contribution through new initiatives Begin integrated service delivery 	<ul style="list-style-type: none"> Continued improvement and stabilization of integrated data services 	
	O&M: \$100,000 (AVRR) + IT devt. cost (projects)	O&M: \$220,000 + IT devt. cost (projects)	O&M: \$220,000 + IT devt. cost (projects)	O&M: \$540,000
2. Integrated Performance Reporting (IPR) <i>Programs Corporate Affairs Comptrollership</i>	<ul style="list-style-type: none"> Define requirements for IPR and G11 replacement Complete investment proposal and business case Seek capital investment funding for 2017-18 	<ul style="list-style-type: none"> Project launch and implementation 	<ul style="list-style-type: none"> Project implementation and iterative delivery 	
	O&M: \$250,000 (AVRR)	O&M: -- + capital ask (est. \$3M)	O&M: -- + capital ask (est. \$3M)	O&M: \$250,000



Business Intelligence (ctd)

Initiative / Lead	2016-17	2017-18	2018-19	Total
3. Integration of Immigration Data <i>Programs</i> <i>ISTB</i>	<ul style="list-style-type: none"> Requirement definition with IRCC Planning and feasibility including legislation and policy assessments Prepare data sharing agreements Detention and removals reporting enhancements 	<ul style="list-style-type: none"> Data sharing agreements Amend MOUs as required Begin data integration Report development on Detention and Removals analysis 	<ul style="list-style-type: none"> Continue data integration and 	
	O&M: \$250,000 (AVRR) + IT devt. (IRCC)	O&M: \$125,000 + IT devt. (IRCC/CBSA)	O&M: \$125,000 + IT devt. (IRCC/CBSA)	O&M: \$500,000
4. Business Analytics Competency Centre <i>ISTB</i>	<ul style="list-style-type: none"> Develop service model Develop Data Acquisition plan and begin implementation Lead Geospatial analytics Develop training program Analytics technology roadmap and architecture 	<ul style="list-style-type: none"> Execute Data Acquisition plan including privacy and security assessments Lead geospatial analytics Implement training program 	<ul style="list-style-type: none"> Service refinement and stabilization 	
	Salary: \$100,000, 2 FTEs (E-E) O&M: \$150,000 (EE)	Salary: \$200,000, 2 FTEs O&M: \$350,000 + IT devt.	Salary: \$200,000, 2 FTEs O&M: \$350,000 + IT devt.	Sal: \$ 500,000 O&M: \$1,120,000
	Salary: \$100,000, 2 FTEs O&M: \$750,000 Total: \$850,000	Salary: \$200,000 O&M: \$695,000 Total: \$895,000 + capital	Sal: \$200,000 O&M: \$695,000 Total: \$895,000 + capital	Sal: \$ 500,000 O&M: \$2,140,000 Total: \$2,640,000 + capital



Advanced Analytics

Key Requirements, 2016-17:

1. *Operational Analytics*

- Strengthened capacity for analytics in the National Targeting Centre and intelligence operations, including irregular migration and immigration enforcement.
- Funding required for detailed planning, architecture, technology improvements.

2. *Program Optimization*

- Support required for Science and Engineering's predictive analytics pilots and development of recruitment strategy for data scientists.
- Funding also required for Science and Engineering work to support Entry-Exit

3. *Data Acquisition*

- Funding required to develop acquisition strategy (for both internal and external data), and to resolve security and privacy issues. Essential support for operational and program analytics.

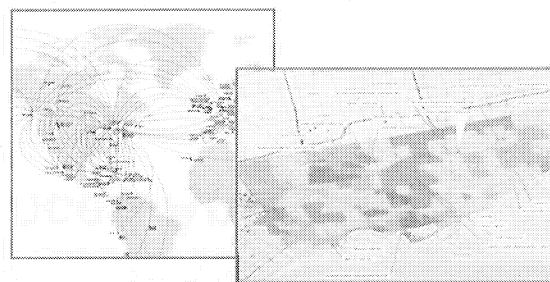
4. *Geospatial Analytics*

- Funding required to conduct pilot in _____ to review best practices within the Public Safety portfolio, and to prepare a business case and costing.



Advanced Analytics (ctd)

- The CBSA is actively using data analytics to fulfill its mandate to support pre-arrival risk assessment leveraging commercial and traveller data bases, social media, geospatial information, and operational models.
- Examples include:
 - **Predictive analytics** models to improve traveller and commercial targeting and strengthen intelligence/investigation leads.
 - Analyzing **open source data** (social media) to conduct tactical inbound air traveller risk assessment for national security; incorporating text analytics (terms/phrases), image analytics, and extremist web sites as identified by Public Safety partners.
 - Using statistical analysis, **data visualization** (Geospatial, temporal) as well as other techniques
 - Operations research to improve scheduling of Border Service Officers and resource allocation.





Advanced Analytics (ctd)

Initiative / Lead	2016-17	2017-18	2018-19 +	Total
1. Operational Analytics <i>Operations</i> <i>ISTB</i>	<ul style="list-style-type: none"> Technology optimization – leverage existing investments Develop requirements for operational environment Planning, architecture and design Focus on Entry-Exit : 	<ul style="list-style-type: none"> Expansion of analytics in multiple operational lines: situational awareness, investigation, intelligence, enforcement Resource alignment and development of analytics expertise Operational analytics environment implementation 	<ul style="list-style-type: none"> Operational analytics environment implementation Continued workforce development and improvement 	
	Salary: \$ 90,000, 2 FTEs (E-E) O&M: -	Salary: \$180,000, 2 FTEs O&M: \$240,000 + IT infrastructure and development cost	Salary: \$180,000, 2 FTEs O&M: \$240,000 + IT infrastructure and development cost	Sal: \$450,000 O&M: \$480,000
2. Program Optimization <i>Programs</i> <i>ISTB</i> <i>Human Resources</i>	<ul style="list-style-type: none"> Complete predictive analytics pilots, including Entry Exit : Develop recruitment strategy for data analysts, as part of CBSA's People Strategy. 	<ul style="list-style-type: none"> Begin operationalizing data science advancements Recruit and train new data scientists Identify new opportunities 	<ul style="list-style-type: none"> Continued workforce development and recruitment 	
	Salary: \$100,000, 2 FTEs (E-E) O&M: -	Salary: \$200,000, 2 FTEs O&M: \$80,000	Salary: \$200,000, 2 FTEs O&M: \$80,000	Sal: \$500,000 O&M: \$160,000



Advanced Analytics (ctd)

Initiative / Lead	2016-17	2017-18	2018-19 +	Total
3. Data Acquisition <i>ISTB</i>	<ul style="list-style-type: none"> Develop strategy and plan Prioritization of data sources Establish task force for security and privacy impact assessments (DSO, ATIP, Programs, Operations) 	<ul style="list-style-type: none"> Execution of data acquisition plan Task force action plan - execution 	<ul style="list-style-type: none"> Continued data acquisition Continued security and privacy assessments as required 	
	O&M: \$400,000 (AVRR)	O&M: \$200,000 + IT development cost	O&M: \$100,000 + IT development cost	O&M: \$700,000
4. Geospatial Analytics <i>ISTB Operations</i>	<ul style="list-style-type: none"> Review use by Public Safety partners Prepare business case and costing 	<ul style="list-style-type: none"> Architecture and design Technology procurement Infrastructure design and implementation 	<ul style="list-style-type: none"> Implementation and delivery 	
	O&M: \$150,000 (AVRR)	O&M: \$200,000 + technology procurement and IT devt. cost (CBSA, SSC)	O&M: \$200,000 + technology procurement and IT devt. cost (CBSA, SSC)	O&M: \$550,000
	Salary: \$190,000, 4 FTEs O&M: \$550,000 Total: \$740,000	Salary: \$ 380,000 O&M: \$ 720,000 Total: \$ 1,100,000	Salary: \$ 380,000 O&M: \$ 620,000 Total: \$1,000,000	Sal: \$0.95M O&M: \$1.89M Total: \$2.84M



Funding Summary

	2016-17	2017-18	2018-19	Total
Data Governance	\$1,170,000	\$890,000	\$640,000	\$2,700,000
Business Intelligence	\$ 850,000	\$895,000 + capital (est. \$3M)	\$895,000 + capital (est. \$3M)	\$2,640,000 + capital (est. \$6M)
Advanced Analytics	\$ 740,000	\$1,100,000	\$1,000,000	\$2,840,000
Total	\$2,760,000	\$2,885,000	\$2,535,000	\$8,180,000



Next Steps

- **EC decision required:**
 - Approval for proposed funding strategy, including allocations for 2016-17: AVRR (\$1.8M), Entry-Exit (\$0.7M), ISTB (\$0.25M).
- **Provide progress reports:**
 - Information Management Committee (quarterly).
 - Executive Committee (December 2016).



Big Data at the CBSA

Preliminary Overview
for the World Customs
Organization

June 2016
Programs Branch

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1 Introduction:

1.1 Background

The World Customs Organization (WCO) has declared 2016 as the year of "Digital Customs – Progressive Engagement" as a way to bring world customs organizations together and share experiences, best practices, and promote the digitization of customs processes. See Appendix A for WCO Release.

By promoting the digitization of customs, the WCO hopes to recognize that the digitization of the Customs landscape leads to improved data collection and the expanded capability to exploit data that improves processing, promotes transparency, identifies risks, and better integrates not only border processing activities but greater law enforcement activities as a whole.

The WCO has asked CBSA a fairly simple, but broad question "What does big data mean to CBSA?" in its effort to bring our experience to the table on one of the newest emerging concepts of data usage called "big data". There are three key principles of big data (Gartner, 2001):

- Volume - The quantity of generated and stored data available to base decisions on.
- Variety - The breadth of data that is available to the decision-making process.
- Velocity - The speed at which data is created and integrated into the decision-making process.

1.2 Methodology

As the concept of "big data" is still emerging and not necessarily well understood, the Global Border Management Data Analytics Division (GBMDA), within Programs Branch, proposed a questionnaire to the Data Analytics Working Group (DAWG)¹ to help answer the question "What does big data mean to CBSA?" as well as identify the current footprint of big data within the CBSA. The intention of the questionnaire was to gain insight into the understanding and execution of "big data" within the CBSA and reach a conclusion that would answer the question posed by the WCO. A high-level survey was distributed to the Advanced Analytics Sub-Working Group members, which is a sub-working group under the DAWG, and the responses compiled are consolidated in this document. The questions included in the survey are available for reference in Appendix B.

¹ The DAWG comprises a broad collection of directorates that are instrumental in shaping and improving the data footprint of the CBSA



2 Findings

2.1 What is big data at the CBSA?

At the CBSA, big data is understood as any work leveraging high volumes of data, including historical and transactional data. Big data is seen as a core enabler within the CBSA, supporting policy decisions and threat assessments.

The CBSA collects data from both internal and external sources. Internal data sources include (but are not limited to) transactional data, examination data, CCTV video streams, volumetric and scheduling data, commercial and traveller data. Externally, the CBSA takes advantage of open source data and external situational awareness data.

The majority of big data work currently done at the CBSA focuses on analyzing high-volume structured data, while future-facing efforts are being made to align the Agency's analytics capabilities with the broader definition of "big data", making use of not only the large volumes of data but taking into consideration variety and velocity as well and efficiently use it to address complex problems.

2.2 How is big data being used?

The CBSA is taking advantage of internal and external data assets to gain better insight to support its facilitation and security mandate. The National Targeting Center (NTC) is currently using big data to identify high risk travellers and goods.

The Advanced Analytics team within the Information, Science and Technology Branch (ISTB), is leading multiple big data pilot projects to enhance predictive analytics, information visualization and improve the use of the Agency's biometric data. That team benefits from access to the Science and Engineering Directorate's Experimental Computing Environment which allows the Advanced Analytics team to tailor software and hardware to any given piece of work. In addition, the team has access to the procured enterprise tools that also provide a suite of advanced data mining capabilities.

An Enterprise Data Warehouse (EDW) currently exists and brings together information from various data sources of mainly internal data for data analytics. The EDW is currently being used to support our targeting operations in the interdiction of travellers and goods prior to their arrival at a port of entry (POE).

In the commercial realm, project funding has served as a catalyst to advance the analytics within the CBSA. Advanced analytics are used in the commercial program to identify and intercept high risk shipments and improve targeting.

2.3 Challenges

The current landscape of big data at the CBSA is truly just beginning and the common understanding and execution of big data generally involves putting together large volumes of data from disparate sources. Further leveraging big data will require addressing challenges



linked to data acquisition, workforce development, data management, and systems infrastructure.

Accessing data in a timely fashion has been identified as one of CBSA's biggest issues with respect to big data. Privacy limitations across jurisdictions make data acquisition for horizontal reporting difficult. In some cases it can take years to receive a sizeable dataset for experiment purposes.

Unlocking the potential for big data usage will require strategically developing our workforce by identifying high potential data analysts that can be hired early in their career and grow professionally inside the Agency. It will also require enhancing current employee skills and capacity through further training and access to analytical tools.

Developing a centralized and specialized function for coordinating and facilitating data and systems acquisition is required to make processes more efficient. Currently, this function is decentralized which leads to inefficiencies due to a lack of standardization of processes. The Agency intends to operationalize the Business Analytics Competency Centre (BACC) within the ISTB to act as the single point of contact to lead and facilitate the implementation of data analytics services. Efforts to improve data management through implementing data governance and stewardship will also alleviate some related issues in the mid-term.

The current enterprise approach to system infrastructure makes it difficult to expand on the analytical capacity of the CBSA. Further integration of data across the Agency is necessary to improve our ability to risk assess both goods and people. The CBSA must move towards an Integrated Data Warehouse (IDW) to replace the existing EDW.

2.4 Moving Forward

To gain maximum value from the Agency's big data efforts, work must be done to promote further integration of data. The Agency must also focus on minimizing barriers to access and broadening the EDW.

Development is continuing on the existing EDW to integrate additional sources and types of information. Very recent additions to the EDW include open-source data sets that will improve our ability to risk assess both goods and people. Additional projects are in the exploratory phase that will bring together biometric screening, facial recognition, automated lie detection, and predictive modelling to the traveller screening process and feed into our big data footprint.

By integrating large datasets into the EDW and expanding access, the CBSA will gain greater insight into big data. This will lead to actionable predictions on high-risk goods and people, including previously unidentifiable relationships.

Moving forward, the Agency must treat data as a corporate asset if we are to leverage big data to its full potential. In an effort to formalizing data governance within the Agency, governance bodies such as the Information Management Committee (IMC) and the DAWG have been established which constitute a positive step towards recognizing the importance of data in the Agency.



3 Conclusion - What does “big data” mean to CBSA?

Big data presents an emerging opportunity for the CBSA to fulfill its mandate in a more efficient and effective way. By taking stock and making use of all available, relevant sources of data in near real-time, the CBSA will be in a better position to make informed, evidence based decisions that will improve facilitation and security processes at the ports of entry. While the value of big data is acknowledged within the advanced analytics community within the CBSA, leveraging big data to its full potential will require addressing some key challenges at all levels of the Agency.

Contacts

Andrei Grushman
Director, Data Analytics
Programs Branch

Erica Ren
Director, Open Government and Data Services
Information Science and Technology Branch



4 Appendix A – WCO News Release

Source: <http://www.wcoomd.org/en/media/newsroom/2015/november/world-customs-organization-declares-2016-to-be-the-year-of-digital-customs.aspx>

World Customs Organization declares 2016 to be the year of Digital Customs

The Secretary General of the WCO, Kunio Mikuriya, announced today that 2016 will be dedicated to promoting the digitalization of Customs processes under the slogan "Digital Customs: Progressive Engagement." WCO Members will have the opportunity to showcase and further promote their use of Information and Communication Technologies (ICT).

The term Digital Customs refers to any automated or electronic activity that contributes to the effectiveness, efficiency, and coordination of Customs activities, such as automated Customs clearance systems, the Single Window concept, electronic exchange of information, websites to communicate information and promote transparency, and the use of smart phones.

This new era of Digital Customs has transformed the way that Customs operates. Ultimately, it ensures progression – the enhanced ability of Customs Administrations to communicate, process goods, receive and exchange information, coordinate border activities, collaborate on law enforcement actions, and promote transparency. Improved technologies thus have the ability to positively impact and transform the Customs landscape through:

- Improved compliance as a result of increased access to regulatory information and functions, as well as services, on the part of all international trade stakeholders; • Faster clearance times for legitimate trade;
- Enhanced coordination between Customs units, as well as between Customs and other border regulatory agencies at the national and international level;
- Increased transparency in regulatory processes and decision-making;
- The use of performance measurement to improve Customs procedures and levels of integrity, such as through the techniques presented in the WCO Performance Measurement Contracts (PMC) Guide;
- Enhanced detection of irregularities and illicit consignments through the collection and analysis of data.

Such positive outcomes will contribute significantly towards the realization of Customs' objectives, including improved revenue collection, border security, the collection of trade statistics, and trade facilitation. "Border agencies are increasingly embracing digitalisation to enhance their effectiveness and efficiency.

The WCO has an extensive portfolio of instruments and tools to support WCO Members in their efforts to further adopt Digital Customs." said WCO Secretary General Kunio Mikuriya.

"Over the course of 2016, I invite all WCO Members to promote and share information on how they are implementing and using digital technologies to advance and achieve their objectives." Mr. Mikuriya added.



The WCO's annual theme will be launched on International Customs Day, which is celebrated annually by the global Customs community on 26 January in honour of the inaugural session of the Customs Co-operation Council (CCC) which took place on 26 January 1953.

The WCO invites the Customs community to mark 26 January 2016 in their diary.



5 Appendix B - Questionnaire

The purpose of this questionnaire is to solicit input for a WCO request to CBSA on our development, use, and challenges of big data, with regards to policy and IT.

2016 has been named the year of "Digital Customs – Progressive Engagement" by the WCO and in an effort to promote CBSA and share best practices and procedures with other WCO members CBSA has been asked to provide some introductory information on our "big data" footprint.

To help showcase CBSA's big data technical and application expertise and how it integrates into our big data network please provide feedback, where applicable, to the following questions.

1. What does big data mean to your area of CBSA?
2. How, in your area is CBSA applying the characteristics of big data?
3. What sources of data does your area consume from CBSA?
4. What sources of data does your area consume from external sources? (provide examples and how they integrate with internal CBSA data, please)
5. Does your area consume any sources of unstructured data?
6. What big data technical solutions are currently being employed in your area? (trial or established)
7. What are some ways you feel CBSA could improve its execution of big data?
8. What is that largest difficulty your area faces with respect to big data



Canada Border
Services Agency

Agence des services
frontaliers du Canada



Executive Committee
November, 2015

Data Analytics

Programs Branch
Information Science and Technology Branch

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PROTECTION • SERVICE • INTEGRITY

Canada



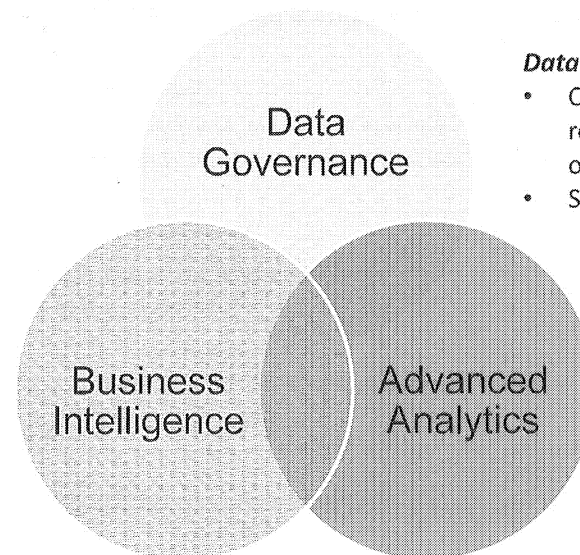
Purpose

- Outline a vision for CBSA's Data Analytics Initiative to transform the Agency's capacity for data governance, business intelligence, and advanced analytics.
- Seek approval for a 3-year action plan and governance framework.



What is “Data Analytics”?

- Data Analytics is an integrated approach to gathering, organizing, and using our data.



Data Governance

- Common management, principles, roles and responsibilities across an organization
- Standard definitions, processes

Business Intelligence

- “Integrated” data for dashboards, reports
- Drawn from internal CBSA sources

Advanced Analytics

- “Raw” data for power users
- Internal and external sources (“Big Data”)



Strategic Objectives

The Data Analytics Initiative's goals are closely aligned with the Agency's strategic objectives:

- **Securing Canada's borders**
 - *Strengthened capacity to use analytics for targeting, intelligence, operational awareness*
- **Streamlining the border experience**
 - *Improved access to quality data for program design, client service, and revenue generation*
- **Management excellence**
 - *More timely, reliable, and accessible business intelligence for performance reporting and decision-making*
 - *Integrated financial and operational data for resource allocation modelling*
 - *Secure and efficient release of datasets*

This initiative is driven by the need to build a culture of analytical excellence. It seeks to mitigate the "Information Integrity" risks highlighted in the CBSA's Enterprise Risk Profile.

[illegible]

- PROTECTION • SERVICE • INTEGRITY



Why We Need Data

Budgeting and Forecasting

Conduct budgeting and forecasting analysis for better resource management and ensure required resources are in place to meet future demands.

Performance Management

Align operational and program performance indicators, and measure and monitor program effectiveness through tracking those indicators.

Statistical Reporting

Perform statistical analysis on trends in program performance over an extended period of time to drive deeper understanding of key areas, e.g. traveller volumes, revenue collected.

Operational Reporting

Leverage data in a consistent and efficient manner to gain a clear understanding of “what happened” and “what is happening” across the CBSA to better manage day-to-day operations.

Operational Intelligence

Integrate internal and external data to conduct advanced analytics in real time (e.g. predictive analytics) in support of targeting, intelligence, enforcement, and threat/risk assessment.

Program Optimization

Apply analytics to improve program design and transformation, e.g. resource allocation, trade fraud detection, revenue management.



Many Functions Involved

ISTB

- Enterprise Architecture and Information Management – provides expertise on IM, architecture and analytics
- Science and Engineering (Lab) – data scientists provide expertise on analytical methods
- Service Lifecycle Management – service delivery, portfolio managers; solution development and support

Operations

- National Border Operations Centre – applied analytics in support of targeting, situational awareness, operational intelligence
- Regional Corporate Program Support Divisions – regional performance reporting and analysis
- Intelligence – Data Exploitation Unit

Comptrollership

- Strategic Transformation and Renewal – Cost Factor Manual; Agency Comptroller - Planning, Budgeting, and Forecasting Project

Programs

- Data Fusion Centre - data governance
- Performance Reporting Unit - data extraction and reporting service, Consolidated Management Reporting - training and support
- Program Integrity unit - risk assessment
- Performance and Analytics units

Corporate Affairs

- Corporate Planning and Reporting – corporate performance reporting (DPR), Performance Measurement Framework, benefits management
- Audits, evaluations, ATIP, media

Human Resources

- HR Programs – workforce analysis (e.g. demographics, time utilization) and link to People Strategy



Progress to Date

- Data Fusion initiative launched by PPC in December 2014.
- Committee and working groups established in February 2015.
 - Focus on governance, collaboration, enterprise basics
- Maturity assessment in April 2015 found Agency is below the industry average, with some significant gaps including:
 - No enterprise business analytics strategy
 - Operational intelligence data and tooling challenges
 - Performance reporting highly fragmented and manual
- Advances made in managing data
 - eManifest, Entry-Exit, CARM and other projects building data analytics components
 - National Border Operations Centre use of API/PNR, cargo and release information, social media
 - Science and Engineering team piloting the use of predictive analytics for Traveller targeting
 - Web Dashboard prototype for user-friendly access to data
 - Open Government Implementation Plan, release of six datasets



A New Strategy

- An integrated, enterprise approach based on increasing our maturity above industry standard over next three years.

Data Governance

- **Governance Structure.** Provide an Agency-wide approach to decision-making on data issues.
- **Stewardship.** Designate data stewards and centres of expertise, with clear roles and responsibilities.
- **Standards and policies.** Implement common definitions, data quality processes, and an enterprise data model.

Business Intelligence

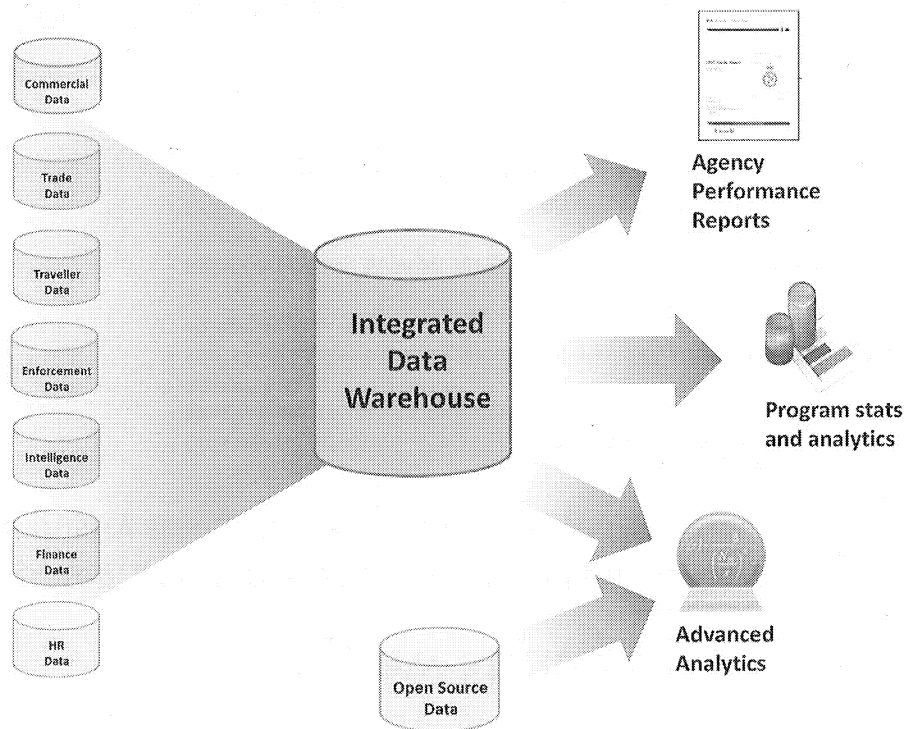
- **Data Integration.** Build an integrated data warehouse, drawing on key data from multiple sources.
- **Self-service.** Enable quick access to key reports and data.
- **Competency Centre.** Create a Business Analytics Centre within ISTB for cross-functional support and coordination.

Advanced Analytics

- **Data acquisition.** Provide analysts with access to key data from internal and external sources.
- **Emerging tools and techniques.** Explore potential for predictive analytics, visualization, and other advanced tools.
- **Workforce development.** Recruit and develop high-skilled analysts.



The Model of the Future





How We Get There

From

Data Governance

- Unclear roles and responsibilities
- Siloed operational systems and databases
- No common definitions and naming conventions (e.g. *dates, gender, location, "traveller"*).
- Lack of consistent guidance on data entry and extraction, with few exceptions

Business Intelligence

- Producing reports is labour-intensive, prone to error and difficult to repeat
- Manual integration from variety of sources.
- Gaps in data collection
- Data housed in CIC Data Warehouse.
- Financial, human resource, and operational data not integrated
- Overlap and duplication in analytics work undertaken by major projects

To

- Data Governance roles, policies, standards are clearly documented and conform with privacy, security, and other requirements
- Enterprise data model aligns business definitions across Agency.
- Management oversight in place for key data integrity issues (e.g. "closing the loop")
- Data integrity issues are prioritized and resolved

- Integrated Data Warehouse automates PMF, APS, and Cost Factor Manual.
- User-friendly access to reports and power users have self service
- Operational, financial, and human resource data are integrated into data warehouse
- Full integration with Service Life Cycle Management Framework



How We Get There (continued)

From

Advanced Analytics

- Challenges in acquiring internal Agency data due to regulatory constraints (e.g. information security, IT security, and privacy)
- Data challenges--such as slow refresh rates, poor data quality, and access to adequate tools--make it difficult to integrate data for risk assessment and targeting
- Lack of highly trained "data scientists" to conduct the necessary research and perform advanced analytics work
- Program areas require analysts and managers with sufficient "data literacy" to provide guidance to the specialists

To

- Efficient processes for data acquisition from CBSA systems where appropriate.
- Access to "raw", nearly real-time data for operational intelligence, targeting, and situational awareness.
- Access to external sources of relevant data (e.g. social media).
- Sustainable core of data scientists with strong links to business functions.
- Data specialists in centres of excellence within each Branch





Proposed Governance

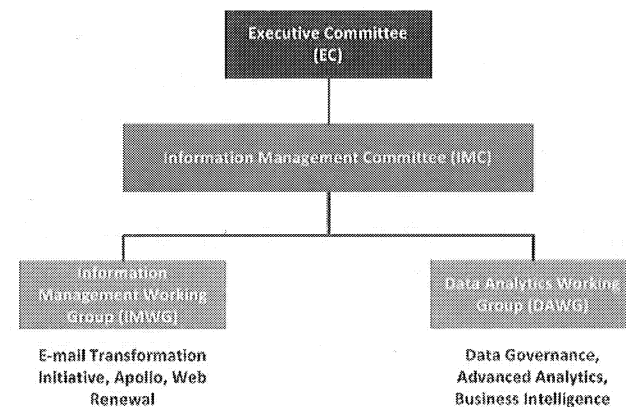
Key Roles

Vice President, ISTB. TBS-mandated role as Information Management Senior Official. Duties include delegated authority to approve release of Open Government datasets.

All Branches. Shared responsibility to manage Agency's data as a corporate asset. ISTB manages enabling technology and processes.

New "Information Management Committee"

- Co-chaired by two VPs [TBD].
- Approves strategies, policies, and processes for management of information and data.
- Collaborates with other VP committees.
- DG representatives from all Branches.
- Working groups and consultative network.
- Merges existing Data Fusion and IM Initiatives steering committees.





Business Case

- To date, the direct costs have been covered by Programs Branch and ISTB.
- Funding on project-by-project basis received from multiple sources, such as Refugee Reform, eManifest, and Entry-Exit.
- However, full business case to be developed to better track and manage all investments and results.
- Funding will be required, including from existing resources, for:
 - Salary and O&M annually to strengthen data governance and support Open Government
 - Expanding our capacity for advanced analytics
 - Capital funding to launch the Integrated Data Warehouse
- Business case to be completed by Spring 2016 for EC consideration.
- Integrated into the Agency's business plans and priorities.



Action Plan

	FY 2016-17	FY 2017-18	FY 2018-19
Management	<ul style="list-style-type: none"> • **Complete business case for next three years. • Alignment with Agency business planning. • Monitor progress, report to PPC/EC every 6 months on progress. • Intake Process. Define intake process for new requirements under SLMF. 	<ul style="list-style-type: none"> • Annual planning cycle • Monitor progress, report to PPC/EC every 6 months on progress. 	<ul style="list-style-type: none"> • Annual planning cycle • Monitor progress, report to PPC/EC every 6 months on progress.
Data Governance	<ul style="list-style-type: none"> • **Establish Information Management structure, data stewardship network, and policies. • Data quality assessment, with a special focus on immigration enforcement and G11 system. • **Launch Enterprise Data Model to provide integrated information architecture. • **Open Government. Complete initial assessment of datasets for releasability. 	<ul style="list-style-type: none"> • Enhance stewardship network, policies, procedures. • Implement recommendations of data quality assessment. • Complete initial Enterprise Data Model. • Complete data inventory and Open Government assessment. 	<ul style="list-style-type: none"> • Complete policies and procedures. • Complete "high priority" data quality fixes. • Begin next phase of Enterprise Data Model. • Monitor Open Government processes and complete annual assessment.

***Short term priority.*



Action Plan (continued)

FY 2016-17

FY 2017-18

FY 2018-19

Business Intelligence

- ****Integrated Data Warehouse.** Launch initial phase of an integrated data warehouse, drawing on key performance reports.
- **Web Dashboard.** Complete first phase of APEX web dashboard, automating key elements of the Traveller APS Dashboard.
- **Immigration Data.** Complete high level requirements for immigration enforcement data, and linkages to CIC's Data Warehouse.
- Create a **Business Analytics Competency Centre** in ISTB to provide support and guidance to users.

***Short term priority.*

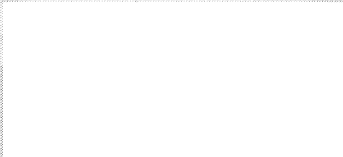
- Implement second phase of data warehouse.
- Continue to build the web dashboard as the "front end" of the data warehouse.
- Complete data "pipe" between CIC and CBSA.
- Recruit, train, and develop "power users".
- Implement "self service tools"

- Implement integrated data warehouse for core data.
- Fully integrate financial and operational reporting.
- Continue to develop business analytics skills and tools.

FY 2016-17

FY 2017-18

FY 2018-19

<h2>Advanced Analytics</h2>	<ul style="list-style-type: none"> • **Strategy. Develop multiyear strategy and high level requirements for data acquisition and advanced analytics. 	<ul style="list-style-type: none"> • Collaborate with B5/FCC and OGD partners to review best practices. 	<ul style="list-style-type: none"> • Monitor and report on results.
	<ul style="list-style-type: none"> •  	<ul style="list-style-type: none"> • Assess pilots and address lessons learned. 	<ul style="list-style-type: none"> • Evaluate results. Develop plans for next phase.
	<ul style="list-style-type: none"> • Visualization. Complete first phase of Information Visualization tool (ISTB-led). • Analytical capacity. Recruit and train "data scientists". 	<ul style="list-style-type: none"> • Implement visualization tool. • Implement new tools and capabilities. 	<ul style="list-style-type: none"> • Expand access to visualization tool. • Implement across all programs and internal services.

***Short term priority.*



Next Steps

- **Decision required:**
 - Approve strategy and governance framework
- **Align with Agency Priorities in FY 2016-17**
 - Integrated Business Plan, Capital Plan, etc.
 - People Strategy
- **Progress Report every 6 months**
 - Program Policy Committee (*March 2016*)
 - Executive Committee (*June 2016*)

Canada Border Services Agency

Big Data Assessment – Executive Review

March 28th, 2014

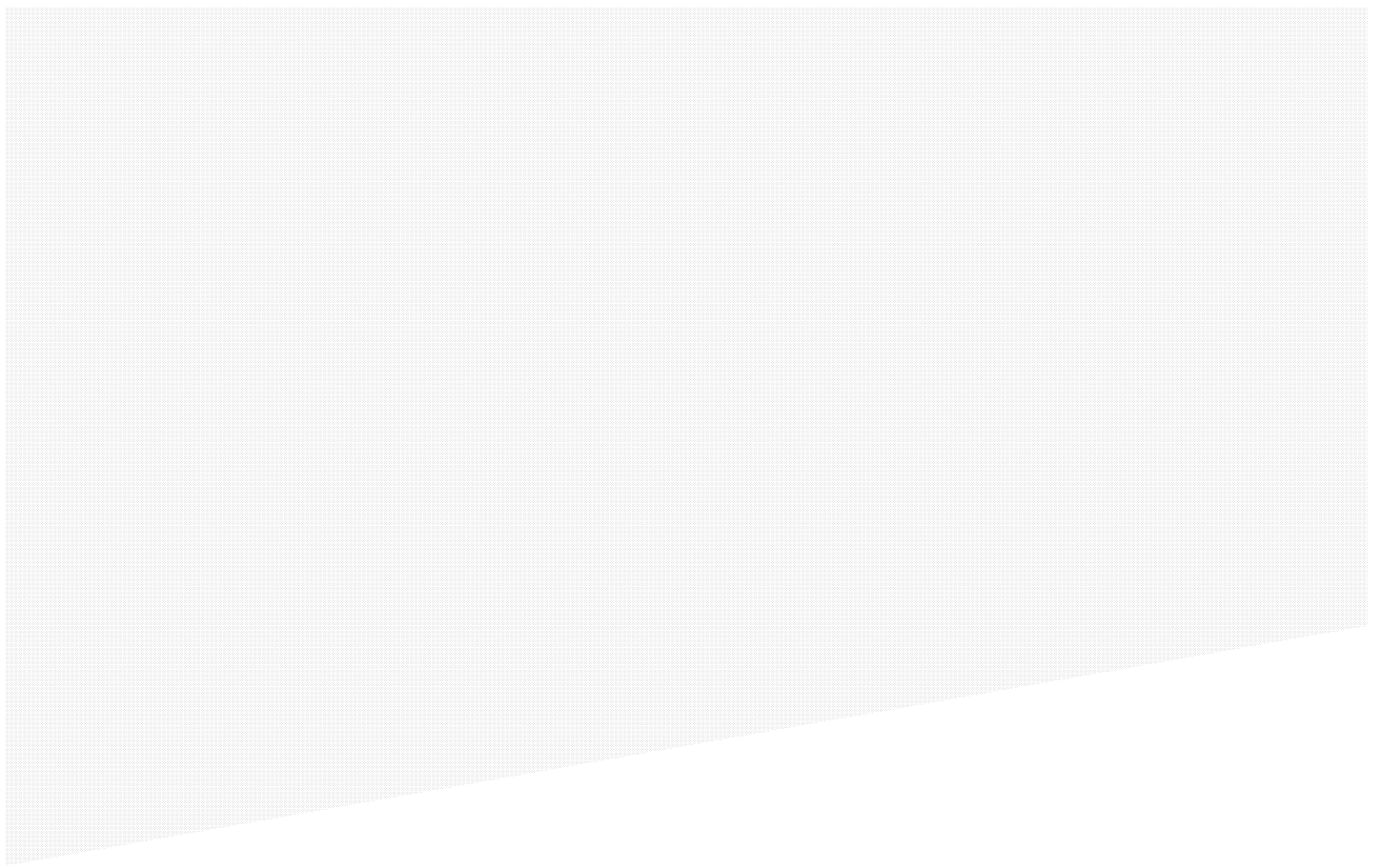


Building a better
working world

Agenda

- ▶ Executive Summary
- ▶ Detailed Recommendation
- ▶ Recommendations Prioritized and Organized into Roadmap
- ▶ Next Steps / Conclusion

Executive Summary



Big Data Assessment Overview

Approach

- ▶ Interviews conducted with stakeholders across the Canada Border Services Agency (CBSA) to better understand current processes, technologies, and skill sets across five key areas:
 1. Agency Drivers
 2. Data Strategy
 3. Analysis and Insight
 4. Drive Change
 5. Measure Results
- ▶ Compared CBSA's current processes, technologies, and skill sets across the five key areas to common big data practices observed by EY as well as industry research
- ▶ Developed and prioritized recommendations aimed at helping the CBSA direct investment to organize and prepare for the demands of tomorrow across each key area
- ▶ Created a high-level roadmap outlining immediate next steps

Executive Summary

Big Data Assessment Key Findings



Canadian Border Services Agency

How is the role of the CBSA going to evolve?

There are a number of driving forces which are changing the landscape of CBSA.

Today	Driving Forces	Tomorrow
Border Services Officers manually inspect most travelers and commercial goods crossing the border at designated points-of-entry	The accuracy of insight across large data sets is helping to focus the number of investigations required	Low risk travelers and the appropriate commercial goods will continue to expect to flow faster across the border
Border Services Officers rely on intuition and experience to determine whether further inspection is necessary	The speed of insight is helping to better identify threats	Border Services Officers will rely on real-time information as well as intuition to determine whether further inspection is necessary
Biometrics and other unstructured data sources are not widely used to help with verification	New technology and data architecture philosophies are making it easier and cheaper to store unstructured data elements	Biometrics and other unstructured data sources will be routinely captured, stored, and merged to help identify threats
Entities who pose risk to Canada are becoming more sophisticated and not bound to legislation, org charts, technology limitations or red tape	Access to advanced analytic skill sets and are hard to acquire and even harder to retain	CBSA's data infrastructure needs to be robust enough to meet future demands and attract and retain top talent

How does the CBSA organize and invest to prepare for the demands of tomorrow?

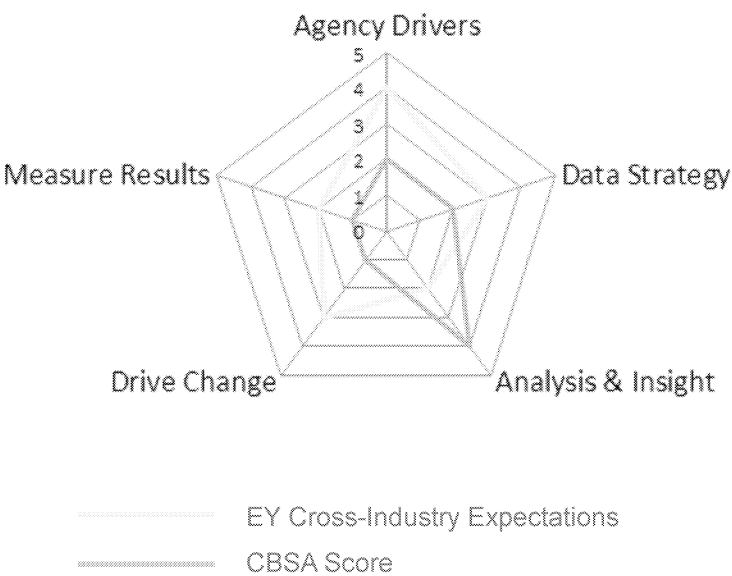
Common Practices and Initiatives Across Other Commercial Industries

Organizational Drivers	<ul style="list-style-type: none"> ▼ Map goals to projects, projects to success metrics, and projects to data requirements ▼ Create data lineage reports ▼ Develop questions, which if answered through data analysis, would improve success metrics, and help achieve goals – creating use cases
Data Strategy	<ul style="list-style-type: none"> ▼ Recognize that existing architecture is unable to keep up with the volume, velocity, and variety of data, which is now available for analysis ▼ Evaluate the benefits of big data platforms and beginning to build business cases to support the investment and implementation ▼ Align their existing teams to support a formal data governance framework
Analysis and Insight	<ul style="list-style-type: none"> ▼ Create data driven organizations where mathematicians/statisticians/data scientists are positioned at the core ▼ Invest in mathematicians/statisticians/data scientists to transform data into insight ▼ Create open communication channels between statisticians and frontline employees
Drive Change	<ul style="list-style-type: none"> ▼ Create an “Analytic Culture of Excellence” to strengthen synergies and improve economies of scale across data sets, technologies, and human capital ▼ Develop common intake mechanisms for prioritizing analysis ▼ Develop outtake mechanisms for transforming insight into action
Measure Results	<ul style="list-style-type: none"> ▼ Prepare work efforts in an agile manner and capture benefits for each piece of analysis conducted ▼ Recognize that not every analysis will yield results ▼ Ensure that Sr. level executives down to frontline employees are linked by common goals, and have similar access to success metrics

Assessment Overview

We looked across five areas to determine where investment should be directed to help organize and prepare for the demands of the future

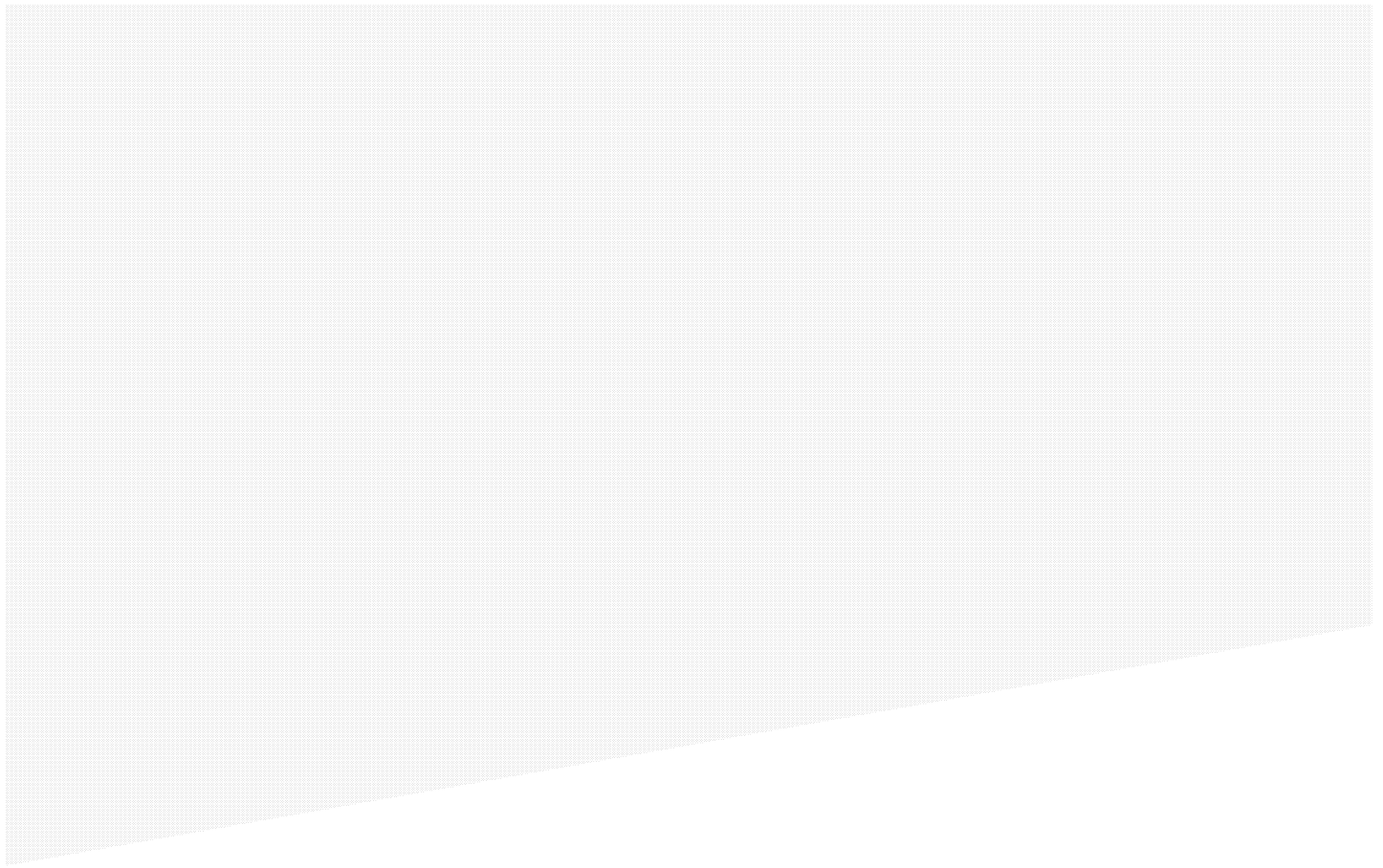
Big Data Assessment Scores



Primary Focus of Assessment:

- 1. Agency Drivers** – Evaluated how the future goals and metrics have been documented and articulated across the Agency
- 2. Data Strategy** – Evaluated how the architecture, data availability, security, and technology stack contribute toward the needs of the Agency
- 3. Analysis and Insight** – Evaluated which methods and tools have been deployed to translate data into insight and review the inventory or reports and on-going analysis
- 4. Drive Change** – Evaluated the processes, mechanisms and program governance used to make change within the Agency once insight has been uncovered
- 5. Measure Results** – Evaluated how each of the current initiatives and key performance indicators are tracked and viewed by senior leadership

Detailed Recommendations



Agency Drivers

Evaluation of goals, metrics, and communication

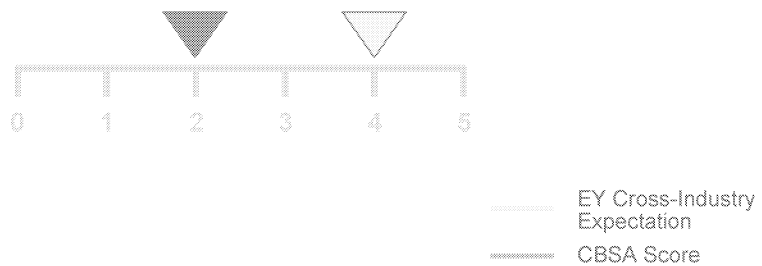
Current Situation:

- » Enterprise goals and metrics seem straight forward, but are interpreted and reported differently across the Agency
 - » Safety, Security, Savings
 - » Security, Facilitation
 - » Four ISTB Performance Pillars
 - » Four Business Lines (Corporate, Traveler, Commercial, Common)
- » Work efforts and goals are separated by project charters and budgets
- » Consistent communication across the Agency is fractured

Issues:

- » Since strategic Agency objectives are loosely mapped to projects and data needs it makes it difficult to create a go-forward big data technology plan
- » Day-to-day tactical priorities often get in the way of larger strategic opportunities
- » The Agency has been challenged leveraging economies of scale across projects including: technologies, data and skill sets

Ranking:



Recommendations:

1. Map current projects to strategic goals, associated metrics, and data needs. (Data lineage reports)
2. Clearly identify and prioritize the questions which need to be answered to help meet the objectives of the CBSA.
 - *This should also serve as the introduction to big data use case development*

Data Strategy

Evaluation of data architecture, data availability, technology stack

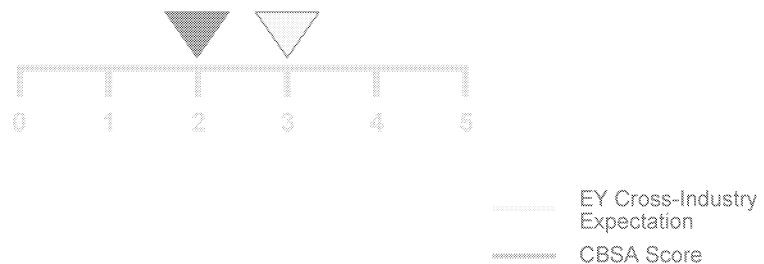
Current Situation:

- Data architecture meets the needs of today's CBSA
- Data architecture falls considerably short meeting the needs of the future CBSA
- Combining unstructured data sources to help identify "things" of interest is limited
- Unstructured biometric information is becoming more easily available and searchable
- The time to address real-time data processing is now (*in-memory computing*)

Issues:

- Long-term strategic roadmap for data architecture is not in place
- Considerable amount of time (months) is required to pull (ETL) data sets used for analysis
- CBSA is not taking full advantage of all the unstructured data sources available (biometrics, publicly available data, visual) in real-time

Ranking:



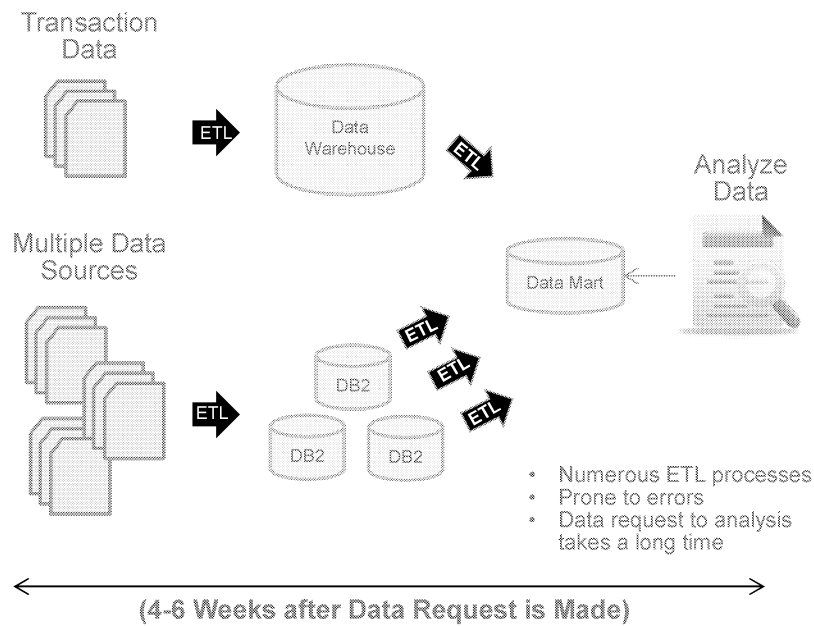
Recommendations:

1. Develop uses cases to support the need for a "big data" platform
2. Conduct "big data" vendor analysis in conjunction with known requirements
3. Create "big data" technology roadmap
4. Implement "big data" platform in a sidecar environment
5. Migrate sample set of data onto the platform

Data Strategy

Big data is more than the 4Vs. “Big data” also represents the way data is stored, updated, and accessed

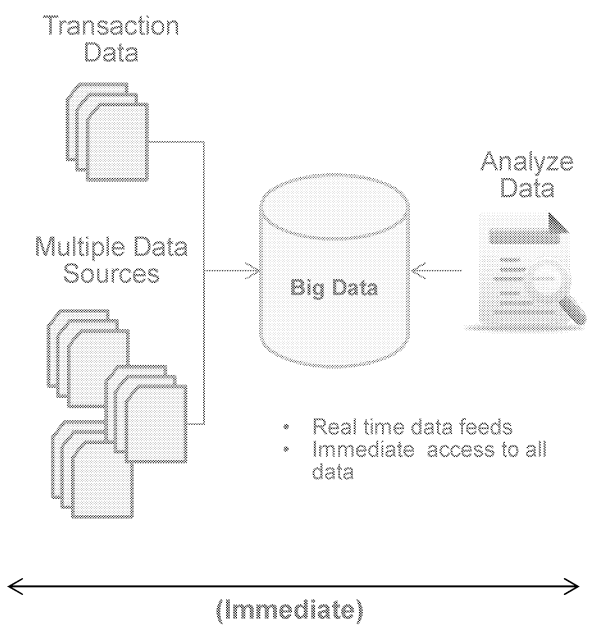
Traditional Way of Analyzing Data:



Risks:

- ▶ Data needs to be passed multiple times to allow for analysis
- ▶ Insight can only be gleaned for data requested
- ▶ Architecture is not built for speed

Future Way of Analyzing Data:



Benefits:

- ▶ Reduces redundant data
- ▶ Accelerated access to data
- ▶ Gives end-users the ability to perform “exploratory analytics”

Data Strategy

Evaluation of data governance

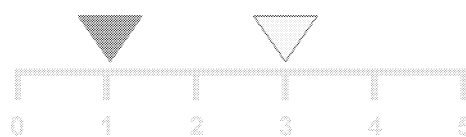
Current Situation:

- ▶ Data governance framework is **not** in place today
- ▶ However, there is a project in flight aimed at creating a data governance framework for a subset of the existing data architecture

Issues:

- ▶ The data governance framework being created today to manage the existing architecture will need to be modified when the move to a "big data" platform takes place
- ▶ There will be a skill gap to overcome when implementing the data governance framework for the new architecture

Ranking:



----- EY Cross-Industry Expectation
 ----- CBSA Score

Recommendations:

1. Create a formal Data Governance Framework for the new architecture:
2. Conduct a policies standards and procedures analysis for the new architecture including:
 - ▶ Data Management
 - ▶ Data Quality
 - ▶ Data Usage
 - ▶ Issue Management
3. Conduct a skill assessment to determine which skills need to be acquired and which employees need to be trained
4. Create organizational structure to ensure consistency and define roles and responsibilities

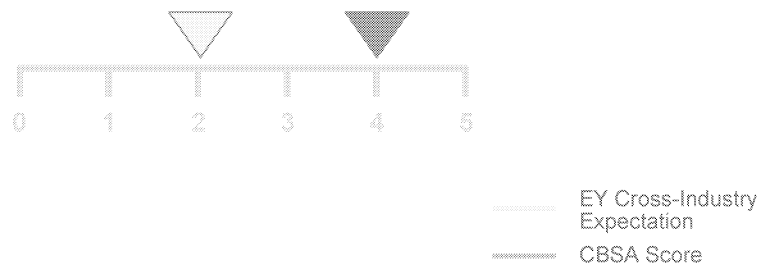
Analysis and Insight

Evaluation of how data is transformed into insight

Current Situation:

- » There is a strong statistical team in place with a background in theory and applied statistics.
- » The team has access to the right technologies (R, SAS, SPSS)
- » Work is prioritized by project codes but there is a lot of work “in the margin”
- » These types of skill sets are in high demand across the market

Ranking:



Issues:

- » Each set of analysis requires a request to the data architects which in turns requires multiple manual processes to pull the data used by the advanced analytic team. These processes are:
 - » Prone to error
 - » Take a significant amount of time
 - » Limits the ability of the advanced analytic team to conduct “deeper” analysis
- » Retaining top talent in an antiquated/frustrating environment is a major risk.

Recommendations:

1. Work with the advanced analytic team to help identify use cases for “big data” platform investment
2. Create and test scenarios based on data scientist intuition and experience – “Agile”
3. Interview Border Service Office/Targeters to generate hypothesis
4. Create direct communication path between the BSOs and the advanced analytic team

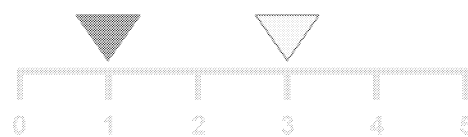
Drive Change

Evaluation of the processes, mechanisms and program governance methods used to make change within the Agency

Current Situation:

- Work efforts to analyze data are predominantly funded through "projects"
- There are limited projects focused on data exploration
- Each project has unique requirements in terms of data, analytic skill sets, and project governance

Ranking:



----- EY Cross-Industry Expectation
 ----- CBSA Score

Issues:

- Since each project brings forth its own set of requirements many redundancies exist: including:
 - Core data
 - Analytic data sets
 - Databases
- Real time analytic initiatives do not follow a formal project management process – Rapid response teams are not in place
- Ad-hoc analytic initiatives are not being tracked as a portfolio of investments

Recommendations:

1. Create an analytic culture of excellence focused on limiting redundancies and leveraging economies of scale
2. As new data architecture is implemented the speed at which insight is created will dramatically increase. As a result, it becomes necessary to create an Agency wide transformation model that quickly converts insight into action.

** It will become increasingly important to link ad-hoc analytic initiatives to measurable changes in the Agency*

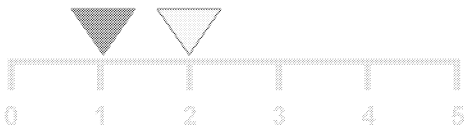
Measure Results

Evaluation of how each of the current initiatives and key performance indicators are tracked and viewed by senior leadership

Current Situation:

- ▶ There are a number of key metrics tracked across the Agency
- ▶ Analytic initiatives “in the margin” are not being measured or tracked back to overall benefits

Ranking:



Issues:

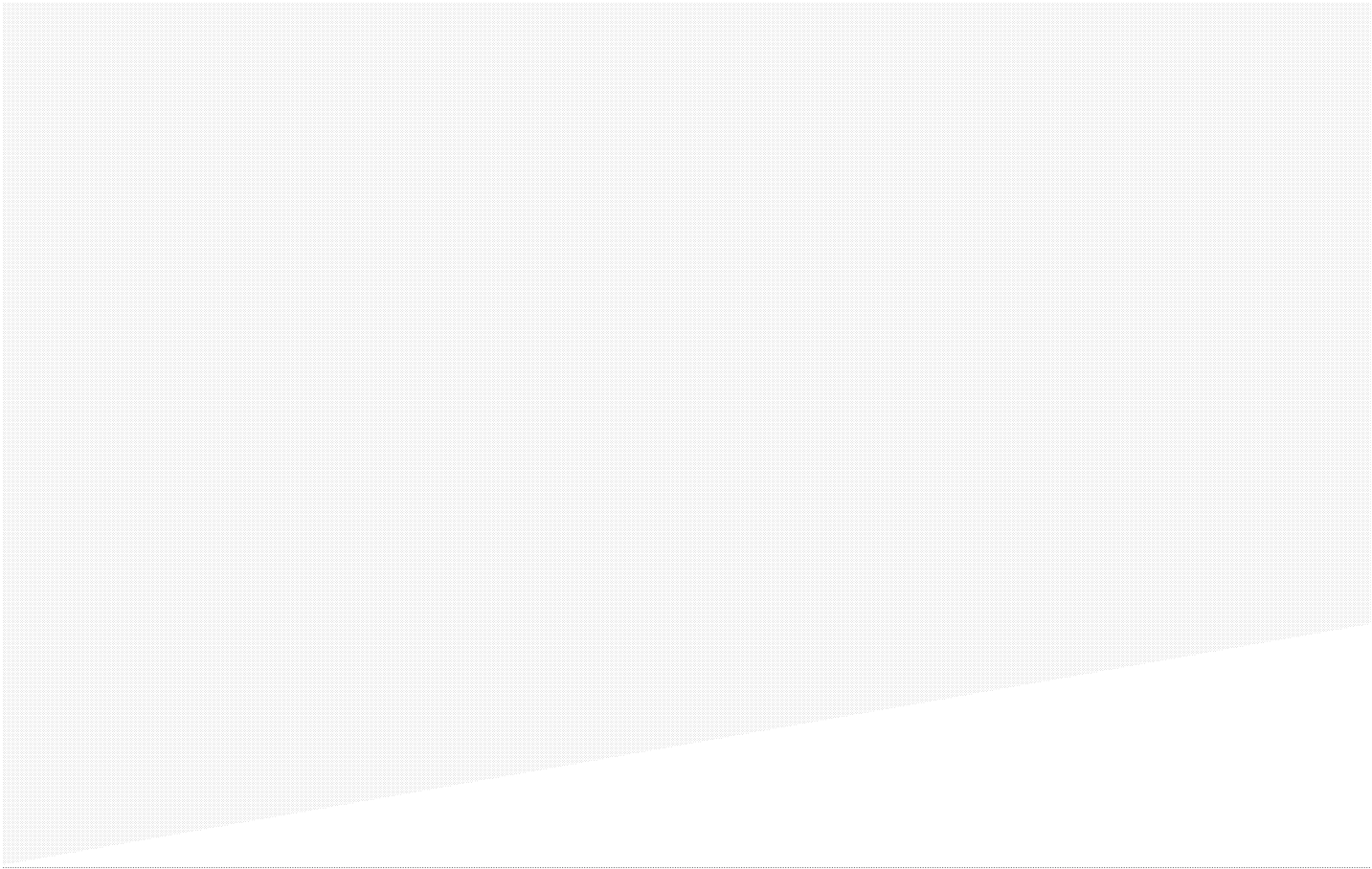
- ▶ Key metrics are not mapped downstream to data attributes
- ▶ Benefits are tracked by long-term projects not in an agile portfolio basis
- ▶ Advanced analytics are not performed on existing projects to predict the likelihood of success or failure

----- EY Cross-Industry Expectation
 ----- CBSA Score

Recommendations:

1. Design high level benefit tracking report which outlines how each project contributes to each metric
2. Begin to use analytics to predict the likely outcomes of future projects

Recommendations Prioritized and Organized into Roadmap



Point Solution vs. Foundational Capability

Some solutions are categorized as point solutions aimed at recognizing value quickly, others are classified as foundational capabilities

Point Solution	Foundational Capabilities
Shorter Project Duration Department Focus Short Term Benefits	Longer Project Duration Agency Focus Long Term Benefits
Agency Drivers <ul style="list-style-type: none"> Map projects to goals, metrics, data needs (Data lineage) Identify and prioritize which questions need to be answered through data analytics Data Strategy <ul style="list-style-type: none"> Develop use cases designed to support the investment of a big data platform Conduct "big data" vendor analysis Create "big data" technology roadmap Create a formal data governance framework for the new architecture Conduct a policies standards and procedures analysis for the new architecture including data management, quality, usage and issue management Conduct a skill assessment for data governance framework Create organizational structure for data governance framework Analysis & Insight <ul style="list-style-type: none"> Help develop use cases designed to support the investment of a big data platform Create and test scenarios based on data scientist intuition and experience Interview Border Service Office to generate hypothesis Create direct communication path between the BSOs and the advanced analytic team Drive Change Measure Results <ul style="list-style-type: none"> Begin to use analytics to predict the likely outcome of future projects 	Data Strategy <ul style="list-style-type: none"> Implement "big data" platform in a sidecar environment Migrate sample set of data onto the platform Analysis & Insight Drive Change <ul style="list-style-type: none"> Create an analytic center of excellence Create Agency wide transformation model Measure Results <ul style="list-style-type: none"> Design high level benefit tracking report which outlines how each project contributes to each metric.

Prioritization Quadrant

Each recommendation relative to each other

Recommendations:

Agency Drivers

1. Map projects to strategic goals, metrics, data needs
2. Identify and prioritize which questions need to be answered through data analytics

Data Strategy

3. Develop use cases designed to support the investment of a big data platform
4. Conduct "big data" vendor analysis
5. Create "big data" technology roadmap
6. Create a formal data governance framework for the new architecture
7. Conduct a policies and procedures gap analysis for the existing architecture and create one for the new architecture.
8. Conduct a skill assessment for data governance
9. Create organizational structure for data governance
10. Implement "big data" platform in a sidecar environment
11. Migrate sample set of data onto the platform

Analysis & Insight

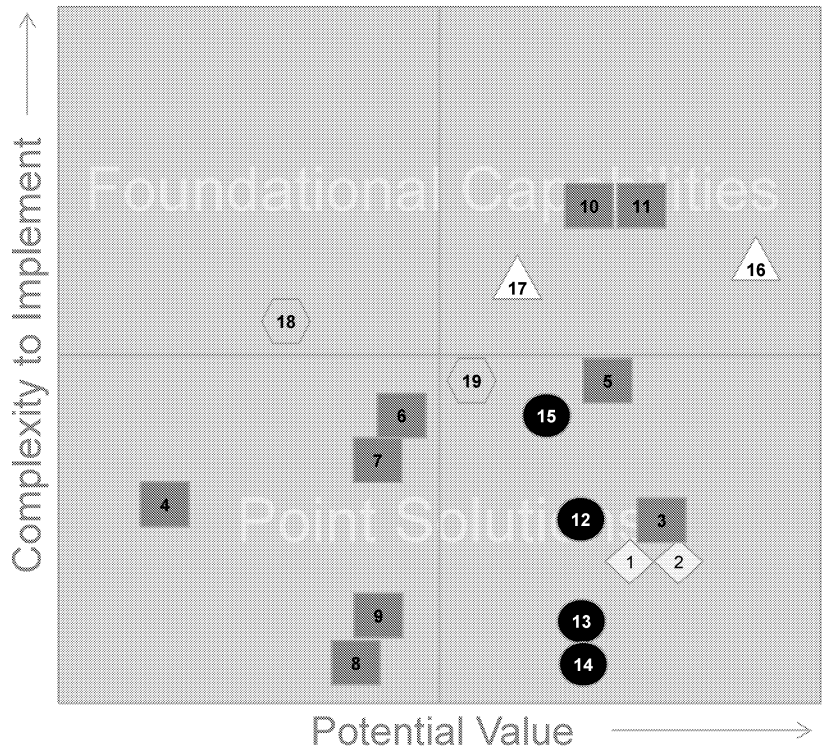
12. Help develop use cases designed to support the investment of a big data platform
13. Create and test scenarios based on data scientist intuition and experience
14. Interview Border Service Office to generate hypothesis
15. Create direct communication path between the BSOs and the advanced analytic team

Drive Change

16. Create an analytic culture of excellence
17. Create Agency wide transformation model

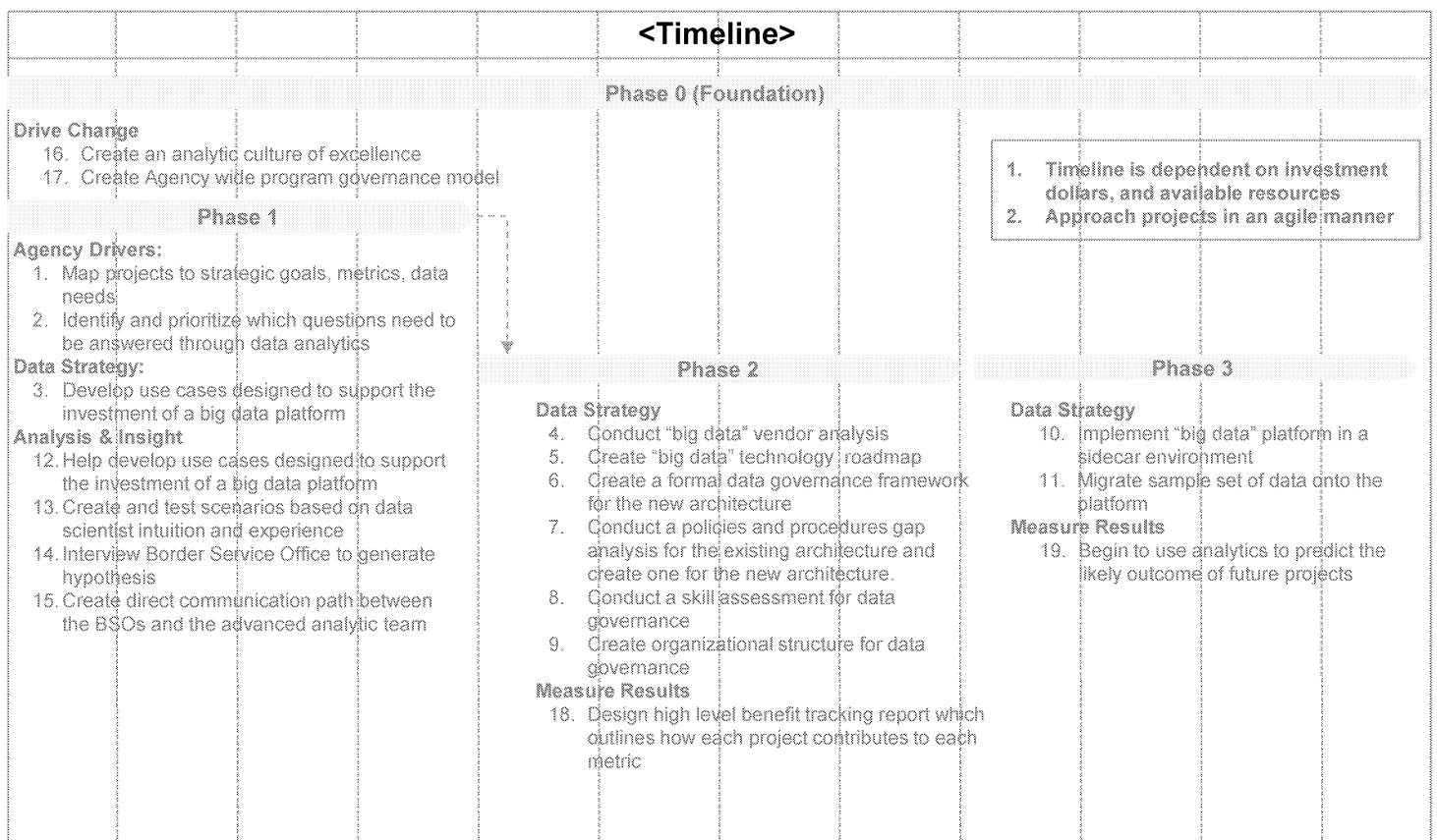
Measure Results

18. Design high level benefit tracking report which outlines how each project contributes to each metric
19. Begin to use analytics to predict the likely outcome of future projects

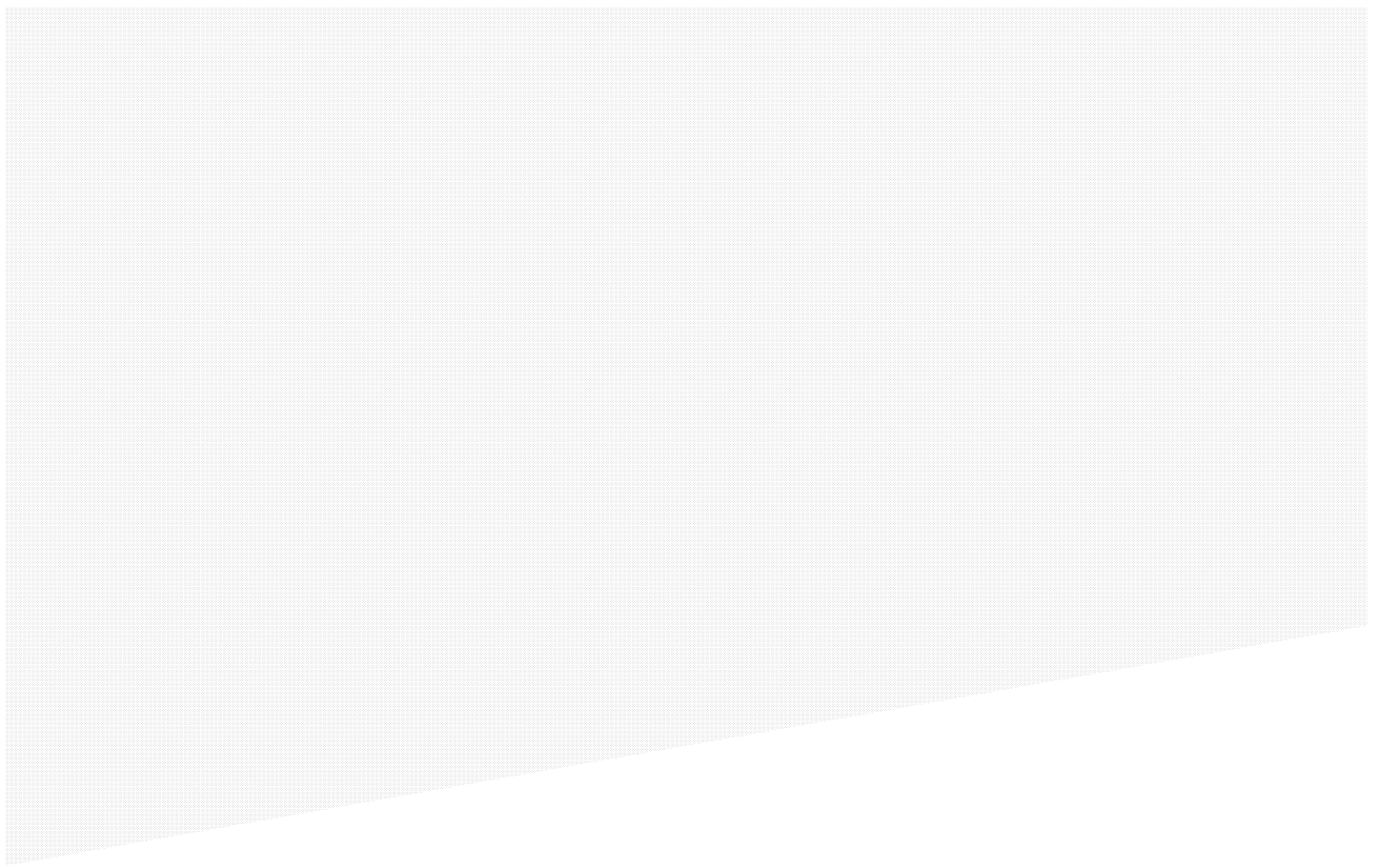


Roadmap

High level roadmap illustrating work efforts



Next Steps / Conclusion



Next Steps

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Canada Border
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Agence des services
frontaliers du Canada



CBSA Enterprise Information Management (EIM) Strategy 2016 - 2018

Apollo ID: 3664138

Revision: 2016-06-28

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1 Setting the Stage

The exponential growth of information, the multitude of in-house systems that generate it and the inherent difficulties in capturing the information resources' actual context (i.e. metadata) has made managing the Agency's information increasingly difficult.

While methodologies, systems, tools and techniques for managing information have evolved over the last decade (within government and beyond), they still fall short of successfully harnessing one of the Agency's critical resources, *information*.

The current strategy aims to initiate a much-needed paradigm shift of traditional Information Management approaches and solutions. The shift can be understood through the following table:

	Current	Future
Role of CBSA's Enterprise Information Management (EIM) division	Compliance-focused, primarily reactive involvement in business processes and operations.	Proactively involved with business clients (as early as planning stage), focused on improving inefficient "information flows".
Approach to deliver services	Mandated & difficult enterprise-wide solutions. <i>("Thou shalt" mindset)</i>	Relevant, stable and efficient services and tools to business client. <i>("Business comes first" mindset)</i>
Valuing corporate information	All unstructured information treated as equally important, making it difficult to focus resources and efforts strategically.	Risk-based approaches successfully used to apply 80/20 principle. <i>(Focus efforts on high-value resources)</i>
Achieving proper information lifecycle management	Reliance on unproven and limited functionality as proposed by content management system vendor.	Innovative use of a wide spectrum of solutions to iteratively and progressively develop the Agency's capability to perform information lifecycle management. <i>(slowly move yardstick forward)</i>
Methodology	Waterfall-centric, multi-year, high-risk.	Incubation, progressive release, early adopters, starting with small changes, building up.
Information Resources of Business Value	Spread across multiple unstructured repositories, low-visibility, out-of-context. Low usability of the information.	Centralized, highly integrated enterprise content management platform, metadata-rich. High business usability of information.

2 Executive Summary

2.1 Context

The present strategy:

- Builds upon the foundational work of the previous deliverable “Information Management 2015-2018: A Strategy to Unlock Information Value in the CBSA”¹;
- Provides a tactical view of required initiatives to implement the vision;
- Provides an updated look at the pressures and internal/external drivers of the Agency
- Includes recommended actions resulting from the Agency internal audit of IM (2015-2016);
- Aligns with the Government of Canada Enterprise Information Management (EIM) Strategy.

2.2 Vision

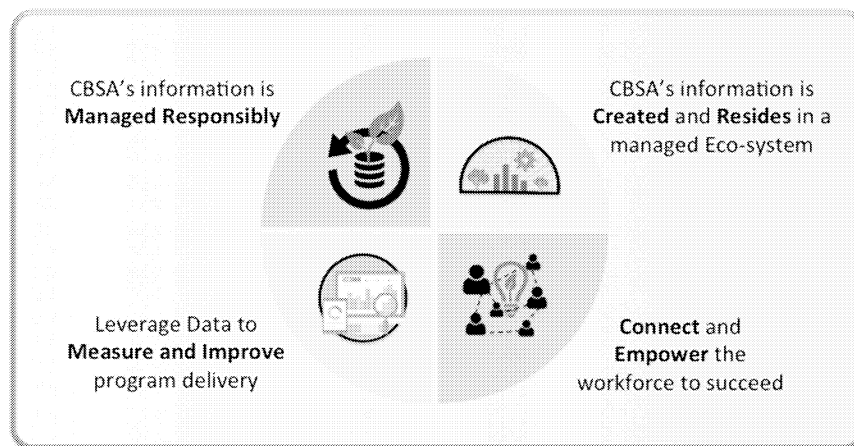
The Agency's mission is to ensure Canada's security and prosperity by managing the access of people and goods to and from Canada. Its vision is an integrated border agency that is recognized for service excellence in ensuring Canada's security and prosperity.

In support of this departmental vision, the Enterprise Information Management (EIM) program is working towards a “New Information Ecosystem” that has the following vision:

Unlock the value of our information by ensuring all CBSA staff and stakeholders have seamless access to the reliable, timely and complete information they need to perform their duties.

To achieve this vision, the Enterprise Information Management (EIM) division is proposing the following four Strategic Directions:

¹ “A Strategy to Unlock Information Value in the CBSA” *Apollo #935722*



EIM Strategic Direction to achieve Vision

2.3 Motivation

Undertaking the proposed initiatives within this strategy will yield positive results and mitigated risk:

1. Provide benefits for key stakeholders

- For the Agency's workforce:
 - ✓ An electronic environment that brings efficiency, synergy and collaboration in the workplace;
 - ✓ Increased worker satisfaction;
 - ✓ Modern electronic work environment consistent with current social and business platforms;
 - ✓ Timely access to complete and authoritative information for service delivery.
- For the CBSA:
 - ✓ Efficient, integrated and secure electronic processes and information flows;
 - ✓ Higher quality of information that can be safely shared, used and re-purposed;
 - ✓ Reduce the amount of stockpiled and mostly unusable electronic information and physical paper boxes;
 - ✓ Financial savings through higher efficiency processes, better life-cycle management, dissemination, and elimination of legacy information;
 - ✓ Information appropriately managed, secured and discoverable to support operations, legal and regulatory requirements.
- For Canadians:
 - ✓ Access to publically available datasets;

- ✓ Efficient government services;
- ✓ Higher control and protection of personal information;
- ✓ Contribute to sustainable development objectives.

2. Respond to current pressures affecting the Agency

- Internal Drivers
 - ✓ Aging and deficient information flows and processes;
 - ✓ Born "Unmanaged";
 - ✓ Information Stockpiling;
 - ✓ Lack of oversight on all of the Agency's information holdings;
 - ✓ Limited ability to "crowdsource" and engage the workforce;
 - ✓ Limited Reach of Information Management support services;
 - ✓ Difficulty implementing efficient Electronic Records Management processes.
- External Drivers
 - ✓ Treasury Board Secretariat (TBS) GC Enterprise IM Strategy and Policy on Information Management;
 - ✓ TBS's Directive on Recordkeeping prescribed level of maturity;
 - ✓ TBS's Directive on Open Government;
 - ✓ LAC issuance of Records Disposition Authorities (RDA) and information disposition requirements;
 - ✓ LAC no longer be accepting information resources of enduring value created in paper format after 2017;
 - ✓ As of July 2015, LAC no longer stores records that are not of enduring value. Boxes of paper have been returned to the originating departments, including CBSA.

3. Responds to the Agency internal audit of IM (2015-2016)

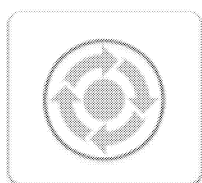
- The audit reported several findings and issued the following recommendations:
 - ✓ Further define and communicate IM responsibilities and accountabilities;
 - ✓ Implement and communicate standard IM tools, guidance and best practices across the Agency;
 - ✓ Develop and implement Agency-wide operational and human resource plans for IM; and
 - ✓ Monitor and Report IM on a regular basis.

2.4 Strategic Response

In response, the EIM organization will take concrete actions. It recommends taking the following steps:

- ✓ Undergo transformational activities to better position EIM in meeting challenges; and
- ✓ Adopt and invest resources in the four proposed Strategic Directions and resulting tactical initiatives.

EIM Transformation




At the core of the re-alignment of the EIM Division's vocation, lies the need to refocus efforts and resources towards modernizing and improving IM's ability to facilitate Agency "information flows". These transformational activities will be an integral part of the IM Strategic Roadmap.

The strategy recommends the following transformational activities:

- ✓ Perform IM Environment Scan (External and Internal);
- ✓ Develop Information Management Service Model ;
- ✓ Harmonize IM Functions across the Agency;
- ✓ Develop HR Plan and Investment proposal;
- ✓ Develop Training & Development Plan.

Strategic Directions

The following strategic directions help us understand and organize Strategic and Tactical efforts:

Strategic Direction	Goal
 <p>CBSA's information is Managed Responsibly</p>	<p>Facilitate user and management responsibilities through the creation of an information accountability framework that directs the use of Apollo for creating, using, disseminating, storing and disposing of information (e.g. Lifecycle Management).</p>

	<p>CBSA's information is Created and Resides in a managed Eco-system</p>	<p>Continue Agency adoption of Apollo, increase management of email business information and decommissioning of network drives in support of Agency business and alignment to GC.</p>
	<p>Leverage Data to Measure and Improve program delivery</p>	<p>Mature the Agency's capacity for data governance, business intelligence, and advanced analytics to drive better risk management, enforcement and decisions.</p>
	<p>Connect and Empower the workforce to succeed</p>	<p>Action organizational culture change through communications, marketing, and workshops to facilitate the sharing of information and knowledge as a strategic asset for effective border management.</p>

Strategic Roadmap

The EIM organization proposes a multi-year roadmap to fulfill the strategic vision for the Agency's new Information Ecosystem. See [Appendix A](#) for the complete roadmap.

3 Background

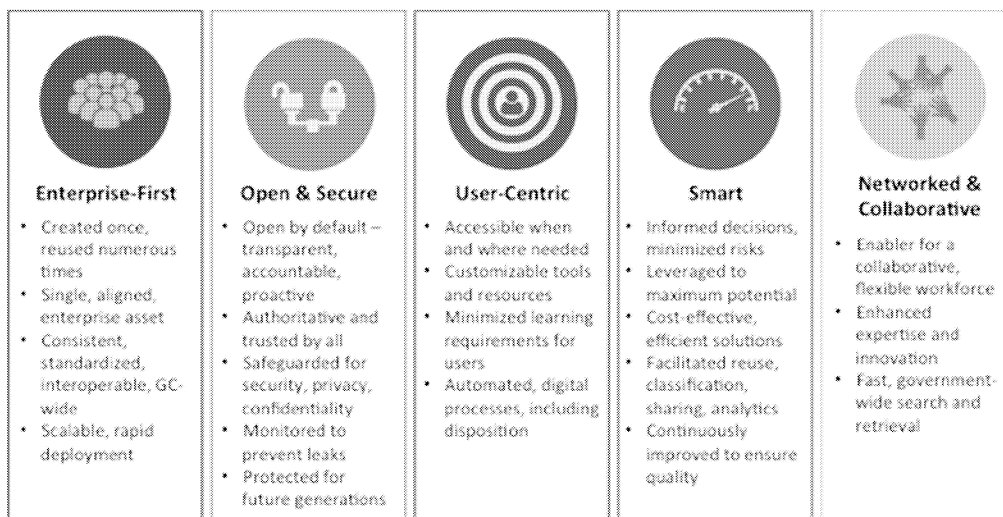
This iteration of the CBSA Information Management Strategy builds upon the foundational work of the previous deliverable *"Information Management 2015-2018: A Strategy to Unlock Information Value in the CBSA"*². While aligning with the stated goals and framework, this version provides a tactical roadmap to realizing the strategic direction of Information Management at the CBSA.

4 Guiding Principles

Guiding principles represent the philosophy that guides the Agency's Enterprise Information Management organization throughout all circumstances, irrespective of changes in its goals, strategies, type of work, or management filter for decisions making.

² *"A Strategy to Unlock Information Value in the CBSA" Apollo# 935722*

In defining the latest strategic direction, CBSA EIM observes and adopts principles defined in the Government of Canada Enterprise Information Management Strategy, as follows:



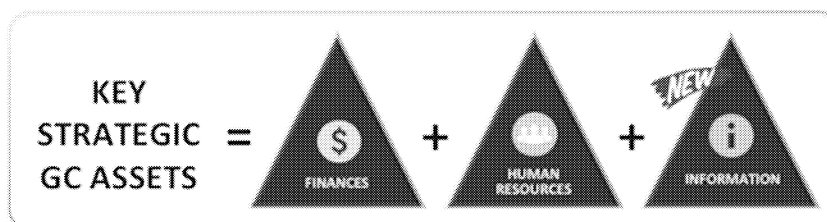
GC Enterprise Information Management (EIM) Guiding Principles

5 Value Proposition

5.1 Information as a Strategic Asset

Information is a business resource (*like Human Resources and Finance*). Not managing information is not a viable option:

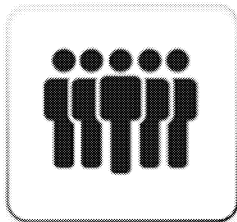
- Information can *enable* us and *overwhelm* us. There is such a thing as “Too much information”.
- Everything we do* within the Agency *starts* with information and generates more *information*.
- The Agency renders decisions every minute using “information”



TBS Vision of GC Strategic Assets

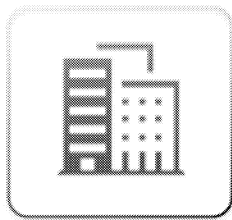
5.2 Benefits

In working towards this vision, the Agency and its workforce can expect to see several benefits:



Users

- An electronic environment that brings efficiency, synergy and collaboration in the workplace;
- Increased worker engagement and satisfaction;
- Modern electronic work environment consistent with current social and business platforms; and
- Timely access to complete and authoritative information for service delivery.



Agency

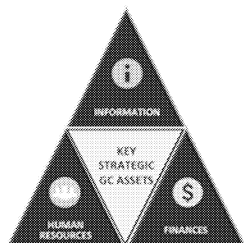
- Efficient, integrated and secure electronic processes and information flows;
- Higher quality of information that can be safely shared, used and re-purposed;
- Reduce the amount of stockpiled and mostly unusable electronic information and physical paper boxes; and
- Information appropriately managed, secured and discoverable to support operations, legal and regulatory requirements.

6 Impetus for change

6.1 Current State

The Agency has a relatively young IM program (6 years old) and like most of OGDs, recent investments have been made towards compliance to the TBS Recordkeeping Directive and establishing the technical infrastructure for supporting tools. The time has now come to shift focus to enabling the Agency's programs and business lines.

While basic IM services are in place, transformation is still required to establish IM as a *foundational business support service*.



Key Strategic GC Assets (TBS)

As stated in the Government of Canada Enterprise Information Management Strategy: **“Information”**, like

***financial and human resources** represents a critical strategic asset without which federal programs and services could not be delivered.”*

Significant resources are dedicated to increasing the maturity of HR and financial management across the Government of Canada. Similarly, an enterprise-wide effort and commitment to effective IM is needed to maximize the value of information as a strategic asset.

6.2 Internal Drivers

As demonstrated in the root cause analysis (*see Appendix B*), the Agency can report the following internal pressures:

Aging and deficient information flows and processes

The Agency’s current information ecosystem lacks several core capabilities and integration to properly assist our business lines in generating, consuming and purging information in a cohesive, sustainable and efficient manner. This creates large information sets that represent considerable risks and manual effort to manage over time.

Born "Unmanaged"

Too much of our information is “born unmanaged” due to the lack of contextual information (e.g. metadata, description, context). This contextual information can come from various sources such as host systems/applications, parent process, manually input by end user, default values, etc. Without contextual information, as the information ages, it becomes near impossible to manage. An efficient information organization must leverage all opportunities to foster metadata-rich information as relying on end-users to manually describe information rarely yields consistent and acceptable results. This creates a situation where keeping and duplicating everything forever becomes the only safe option.

Information Stockpiling

There appears to be no solution in sight to end stockpiling of electronic and paper information. Paper based information, especially, is ineffective, inaccessible, slows down our business processes and is not easily re-usable. As more pockets of information are kept for long periods of time, there is a high possibility that we lose track of them entirely (e.g. creator of information leaves the Agency, systems or processes are superseded without proper migration or disposition of information, etc.). Without the proper ownership and oversight strategy, an organization can therefore quickly lose sight of large collections of information (electronic and paper).

Lack of oversight on all of the Agency's information holdings

The Agency is in possession of significant amounts of orphaned and unmanaged information holdings, some of which are decades old. These holdings are discovered on an adhoc bases and likely only represent a small portion of our holdings. A formal and thorough approach to tracking our information resources must take place. Information also exists in multiple unmanaged repositories within the Agency and beyond (e.g. Global Case Management System – GCMS – hosted by IRCC). The Agency must be rigorous and work with IRCC and other partners to ensure shared information is managed properly and readily available to meet CBSA business requirements.

Limited ability to “crowdsource” and engage the workforce

We are not currently positioned to offer an engaging and collaborative electronic environment to leverage the workforce's collective input, organizational knowledge and abilities (e.g. crowdsourcing, capturing and re-using knowledge, etc.). Ensuring information in all formats is available as a business resource will increase efficiency and productivity while also supporting knowledge transfer of corporate memory.

Limited Reach

Enterprise Information Management (EIM) is not sufficiently represented and integrated within portfolios to play a proactive oversight role and provide foundational business support.

Difficulty implementing efficient Electronic Records Management processes

The approach and solution to information lifecycle management in an electronic document and records management environment that has been promoted at the GC level has very limited success overall (e.g. at the GC level). The model itself is being rethought from the ground up in order to find a definitive solution to managing our departmental information.

6.3 External Drivers

In addition to internal pressures departments and agencies are expected to comply and policies and directives related to information management:

- Treasury Board Secretariat (TBS) has provided guidance by publishing the GC Enterprise IM Strategy and a Policy on Information Management;
- TBS's Directive on Recordkeeping dictates a prescribed level of maturity in all departments and agencies;
- TBS's Directive on Open Government which requires departments and agencies to maximizing the release of Government of Canada open data (structured data) and open information (unstructured documents and multi-media assets);
- LAC issue Records Disposition Authorities (RDA) which enable government institutions to dispose information resources no further business value and requires them to transfer records with enduring value;
- LAC have stated that they will no longer be accepting information resources of enduring value created in paper format after 2017;
- As of July 2015, LAC no longer stores records that are not of enduring value. Boxes of paper are being returned to the originating departments.

6.4 Agency internal audit of IM (2015-2016)

The CBSA participated in a horizontal internal audit of IM carried out in 2015-2016 by the Office of the Comptroller General (OCG). IM was ranked as a high audit priority in the OCG's risk-based audit planning process because it is fundamental to all aspects of government programs and services, supports informed decision-making, efficient and effective service delivery, and is critical to achieving goals and mandate of the government.

The audit has identified that the Agency has governance and some monitoring frameworks in place to support IM; however, IM is currently delivered as a number of initiatives instead of an Agency-wide program. As a result, there is an ongoing risk that IM will not be integrated as a foundational business support for the Agency's activities. Opportunities exist to enhance roles and responsibilities, accountabilities, procedures, and reporting and monitoring practices for IM.

The audit highlighted the following key findings:

- Governance committees exist and are comprised of management that has the ability to influence IM initiatives. While roles and responsibilities were defined and documented, additional communication is required to ensure that all stakeholders are aware of their responsibilities.
- IM accountabilities were established for IM committees, the executive level and some functional communities, but not for all employees with IM responsibilities.

- Policies, guidance, tools and training were developed and accessible to employees. Opportunities exist to further implement and communicate standard IM tools, guidance and best practices across the Agency to support the consistent implementation of IM.
- At the time of the audit, operational and human resources plans to support IM were under development with a draft anticipated for September 2016.
- The current monitoring and reporting practices for IM were limited in scope. Expanding activities to monitor and report on IM is needed to support oversight and the identification of issues requiring corrective action.

The findings noted above confirm that ongoing effort is required to address the gaps identified in the 2011 horizontal internal audit of IM related to capacity and change management.

It further made the following recommendations:

- Further define and communicate IM responsibilities and accountabilities;
- Implement and communicate standard IM tools, guidance and best practices across the Agency;
- Develop and implement Agency-wide operational and human resource plans for IM; and
- Monitor and Report IM on a regular basis.

7 EIM Response

Direction

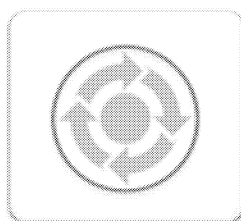
To respond to these pressures, the EIM organization will take concrete actions. The following strategic directions help us understand and organize these efforts:



CBSA IM Strategy - Strategic Directions

7.1 EIM Transformation

To position itself to deliver on these actions and to better meet the new “information needs” of the Agency, EIM should consider undertaking an internal transformation.



Transform & Adapt

At the core of this re-alignment of the EIM Division’s vocation, lies the need to refocus efforts and resources towards modernizing and improving the Agency's "information flows". These transformational activities will be an integral part of the IM Strategic Roadmap

7.1.1 Modernized IM Skills & Competencies

With the evolving challenges associated with managing electronic information, core competencies and knowledge base of EIM resources should follow suit. The agency’s need for information services goes beyond traditional recordkeeping. EIM should invest in cultivating and acquiring modern and multi-dimensional skills to best support its business clients:

Key Skills

- Business Analysis

- Process re-engineering
- Enterprise Content Management & information lifecycle management
- Information Architecture & Design
- Collaboration patterns and best practices
- Electronic Disposition Reporting and processes
- Change Management & Communication skills
- Presentation and Negotiation skills

Knowledge Areas

- Understanding of critical information flows of the Agency
- Agency's repositories, authoritative system of records
- Present and future capabilities of the Agency's information ecosystem
- Corporate metadata models and taxonomies
- Information Governance and delegation structures

7.1.2 Transformation Activities

Perform IM Environment Scan (External and Internal)

- Conduct environmental scan to identify gaps in current IM services and verify alignment with new Treasury Board GC IM Strategy (2016) (*In support of IM MRAP 2.1 – 30/10/2016*) (*2 months*)
- Engage Business Units via the IM Working Group, in the context of influencing the strategic direction and identifying challenges in information process, compliance and management. (*In support of IM MRAP 2.4 – 31/03/2017*) (*2 months*)

Develop Information Management Service Model

- Develop new IM Service Model and catalogue of services based on required adjustments as a result of the environmental scan (*In support of IM MRAP 2.2 – 30/10/2016*) (*1 month*)
- Develop a captivating marketing and advertising plan for new EIM Services Model (*2 months*)
- Integrate new IM Services within enterprise frameworks and processes as required (*e.g. SLMF*) (*3 months*)

Harmonize IM Functions across the Agency

- Identify and propose common IM functions, job descriptions and classification levels for HQ and regions in support of records and information management functions (*In support of IM MRAP 3.4 – 30/01/2017*) (1 month)
- Introduce the Business Information Agent role (6 months)

Develop HR Plan and Investment Proposal

- Proposal to bridge the gap between the current resource base and what will be required moving forward. Identify gaps in skills and competencies and propose new competencies to address changes in the IM environment (*In support of IM MRAP 3.5 – 20/02/2017*) (2 months)
- Request normalization of the Apollo support team in Gate 7 as the Apollo implementation project moves from project status to ongoing state through presentation to the Transformation, Innovation and Project Portfolio Committee (TIPP). (*In support of IM MRAP 3.2 – 30/08/2016*)

Develop Training & Development Plan

- Identify training opportunities, courses and skills development for existing and new IM resources in order to build competencies and skill sets required to support business, and ensure usability of information resources in all formats. (*In support of IM MRAP 3.6 – 30/03/2017*)

8 Strategies & Actions

In order to support the EIM vision, the following strategic directions are defined:

8.1 Strategic Direction #1: CBSA's Information is Managed Responsibly



Goal: An information accountability framework that encourage desirable behavior in the valuation, creation, storage, use, archival and deletion of information.

Current Gaps

Operational

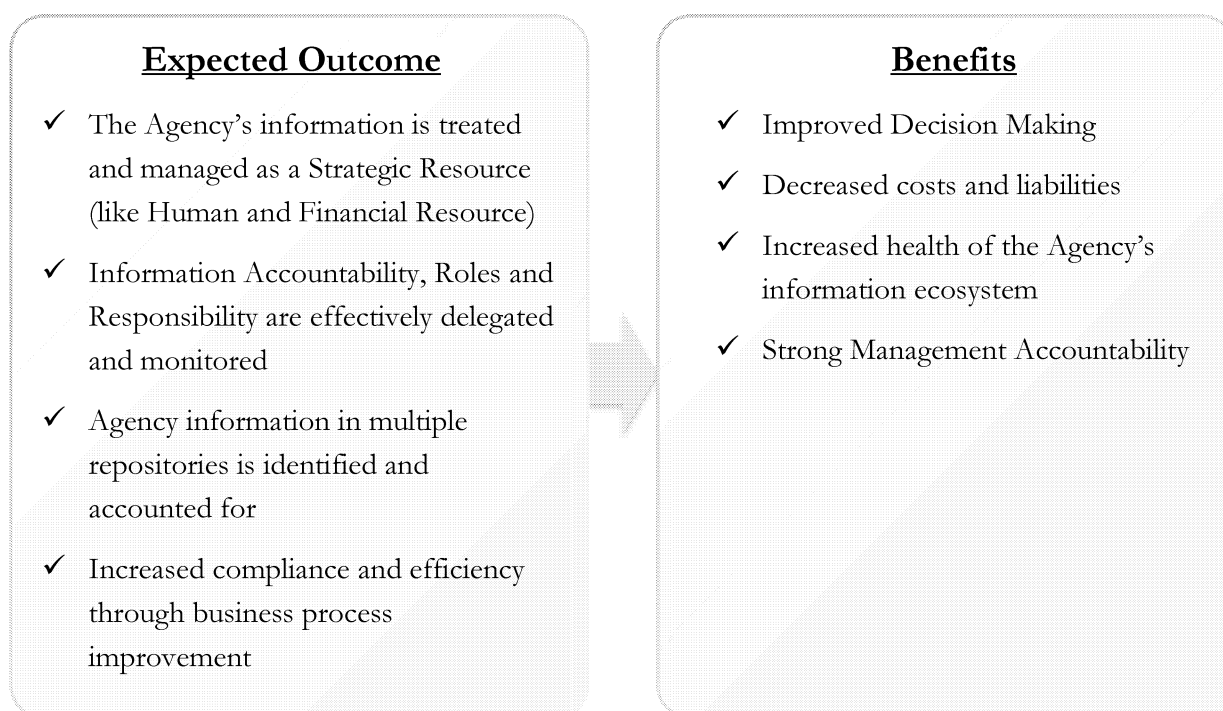
- Regional IM roles and responsibilities are often not acknowledged or defined

- Paper / electronic information unmanaged and orphaned
- Data quality challenge - no identified stewardship roles
- Data is siloed and inaccessible to most of Agency

Compliance

- Lack of information lifecycle management is liability risk

Value Chain



Targeted Actions

To move towards this strategic direction, the following actions are recommended:

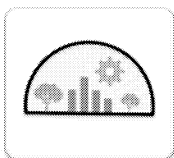
- ✓ ***Develop National IM Performance Management & Reporting Framework***
 - Design tracking and measuring method for our performance at managing our business information holdings
 - Propose and seek IMC endorsement to create framework in order to track the management of paper and electronic records
 - Engage Corporate Affairs Branch for guidance and advice in the creation of a meaningful IM Performance Management Framework aligned with the Agency Performance Summary

- Identify key performance indicators for information management well defined and monitored
- ✓ ***Strengthen IM Roles and Responsibilities***
 - Review IM Roles, Responsibilities and Accountabilities, establish Information and Data Stewardship
 - Develop information accountability delegation model
 - Develop communication plan
 - Present communication plan to EC
- ✓ ***Perform Information / Data holdings Environment Scan***
 - Build a comprehensive Inventory of the Agency's information holdings
- ✓ ***Continue to work towards compliance to the GC Policy suite***
 - IM Support for elimination of paper forms
 - GC Recordkeeping directive
 - Implement Open Government Service to Canadian
 - CBSA Open Data Risk Assessment framework

For further details on these proposed actions, please consult Appendix C – Detailed Action Plan.

To see the proposed actions in context to overall activities of the strategy, please see Appendix A – EIM Strategic Roadmap.

8.2 Strategic Direction #2: CBSA's information is Created and Resides in a Managed Eco-system



Goal: Build an **engaging experience** through an **efficient Information Ecosystem** for the Agency

Current Gaps

Operational

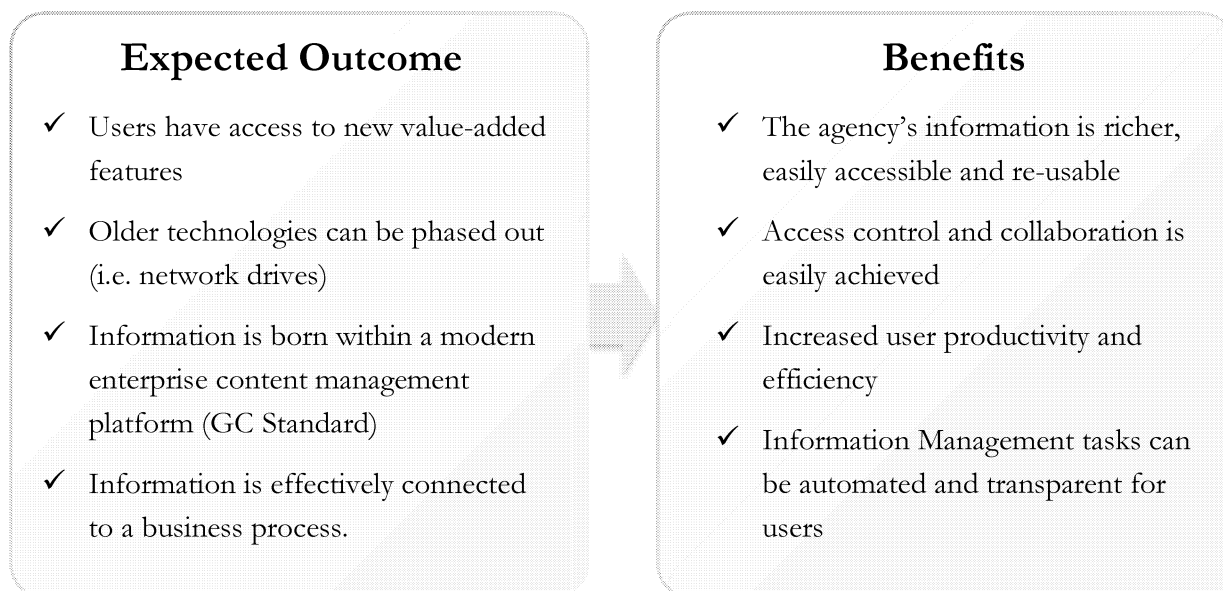
- Network drives, Outlook and local drives currently largest repositories of unstructured and unusable information

- Multiple stand alone and aging systems

Compliance

- Information not managed per Government of Canada regulation
- Everything is kept forever

Value Chain



Targeted Actions

To move towards this strategic direction, the following actions are recommended:

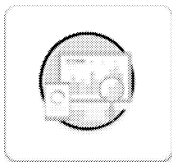
- ✓ ***Re-launch Apollo for business onboarding and adoption***
 - Improve system performance
 - Simplify information structure and rules
 - Transition clients to simplified structure
 - Upgrade Apollo to latest product iteration (Content Suite 2016)
 - Develop information migration strategy & methodology
- ✓ ***Optimize business information flows through enabling technology***
 - Initiate Digitization pilots
 - Assess automated metadata tools & auto-classification
 - Initiate automated workflows
 - Pilot Electronic signature integration
- ✓ ***Initiate Shared Drive clean-up and shut down***

- Develop strategy and methodology
- Work with partners to clean-up and shutdown
- ✓ ***Modernize the way we do recordkeeping & information lifecycle management***
 - Develop Information valuation and Prioritization system
 - Develop new Records Disposition Strategy & Process
 - Internal Policy Review & Update
 - Strengthen foundational records support by identifying and disseminating retention and disposition timeframes across regions for records activities
 - Phase out micro-film in favor of digitized records where feasible

For further details on these proposed actions, please consult [Appendix C – Detailed Action Plan](#).

To see the proposed actions in context to overall activities of the strategy, please see [Appendix A – EIM Strategic Roadmap](#).

8.3 Strategic Direction #3: Leverage Data to Measure and Improve Program Delivery



Goal: Transform the Agency's capacity for data governance, business intelligence, and advanced analytics to drive better outcomes and decisions.

Current Gaps

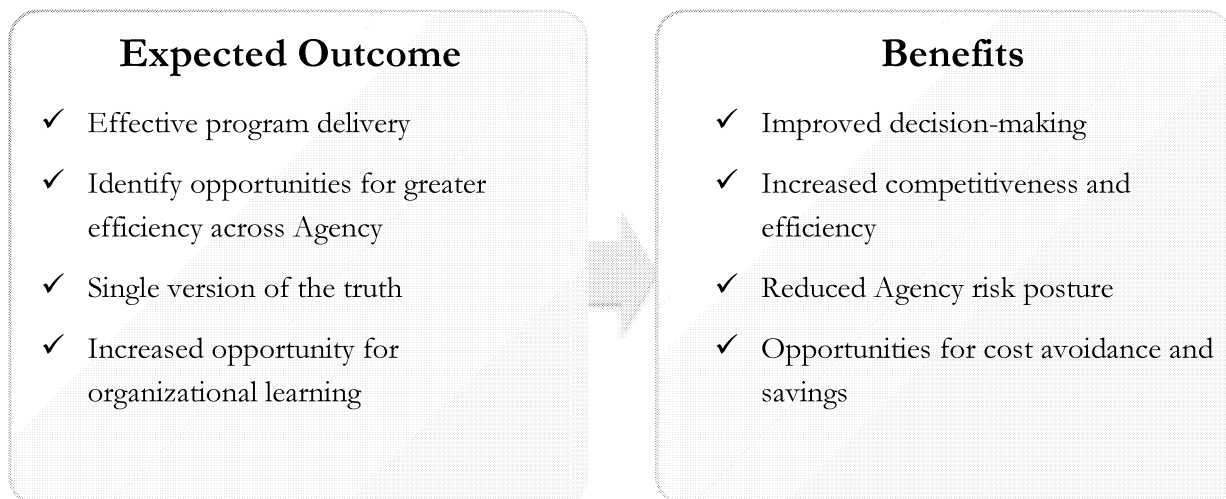
Operational

- Challenge in accessing data required to perform time sensitive front-line operations
- Poor data quality affects the Agency's ability to make the right decisions
- Limited workforce skillsets
- Technology challenges

Compliance

- Requirement to continuously measure and improve performance
- Open Government Directive requires proactive release of information and data to the public

Value Chain



Targeted Actions

The defined action plans for the *Data Analytics Initiative* and *Open Government Action Plan* are summarized as part of this EIM Strategy; for full details and context please see respective surrogate documents

Data Analytics Initiatives: [English](#) | [French](#)

Open Government Implementation Plan (OGIP): [English](#) | [French](#)

• **Data Governance**

- ✓ 2016-2017
 - Establish Data Governance Centre
 - Complete Business Data Model - Phase II
 - Launch Open Government Implementation Plan (OGIP) 2016
- ✓ 2017-2018
 - Continue to address data integrity priorities
 - Operationalize Business Data Model
 - Release planning of data and information, OGIP 2017
- ✓ 2018-2019
 - Ongoing data governance, quality control
 - Ongoing maintenance
 - Ongoing delivery of data and information, OGIP 2018

- **Business Intelligence**

- ✓ 2016-2017
 - Establish Integrated Data Warehouse (IDW)
 - Define requirements for Integrated Performance Reporting (IPR) tool, including access to the IRCC data warehouse
- ✓ 2017-2018
 - Data acquisition and service delivery
 - Seek capital investment funding, project launch
- ✓ 2018-2019
 - Ongoing data acquisition and service delivery
 - Project implementation and iterative delivery

- **Advanced Analytics**

- ✓ 2016-2017
 - Expand operational analytics capacity, e.g. Targeting, Intelligence
 - Complete Program Optimization pilots e.g. trade fraud, API/PNR
- ✓ 2017-2018
 - Implement operational analytics environment
 - Expand data science capacity
- ✓ 2018-2019
 - Ongoing people management, maintenance

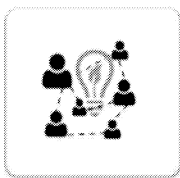
- **Open Government**

- ✓ 2016-2017
 - Identification and cataloguing of data for Open Government
 - Execute the Agency's Methodology for Establishing a Data Inventory
 - Develop the required tools to support the management of the inventory and the publishing of datasets
 - Execute the Dataset Release Plan
 - Develop methodology for the information inventory
 - Endorse and approve new Open Government policies and protocols
 - Propose investment business case for non-structured information conversion (i.e. machine readable format)
- ✓ 2017-2018
 - Conduct information inventory and associated Information Release Plan
- ✓ 2018+
 - Focus on the release of Open Information

For further details on these proposed actions, please consult [Appendix C – Detailed Action Plan](#).

To see the proposed actions in context to overall activities of the strategy, please see [Appendix A – EIM Strategic Roadmap](#).

8.4 Strategic Direction #4: Connect and Empower the workforce to succeed



Goal: Instill the right values to create a collaborative culture where information is treated as a strategic asset in support of efficient border management.

Current Gaps:

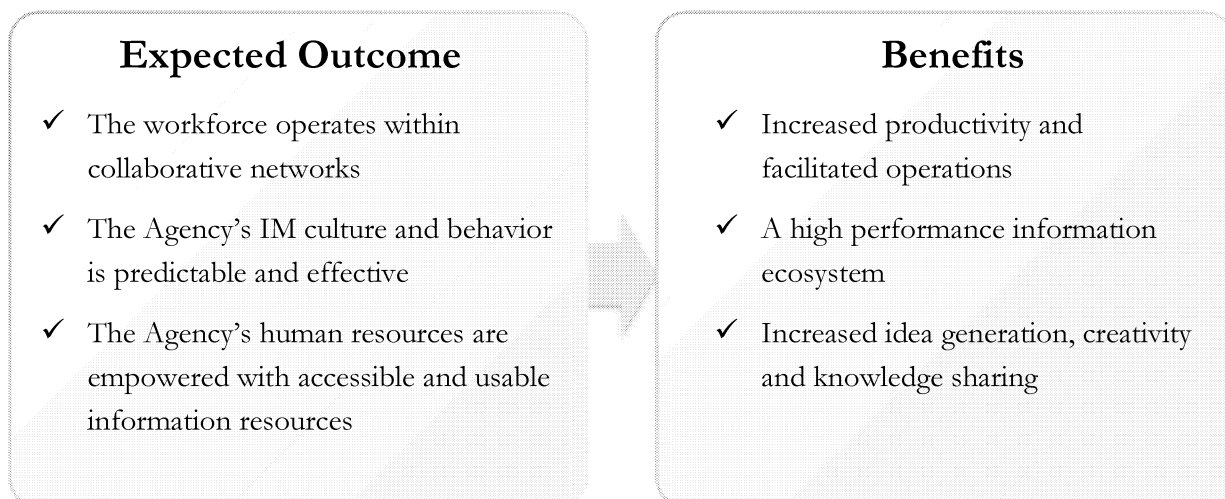
Operational

- Information currently in siloes
- Outdated business process inhibits efficient business collaboration

Compliance

- IM is viewed as an EIMD responsibility
- Open Government and Open by Default not part of culture

Value Chain



Targeted Actions:

To move towards this strategic direction, the following actions are recommended:

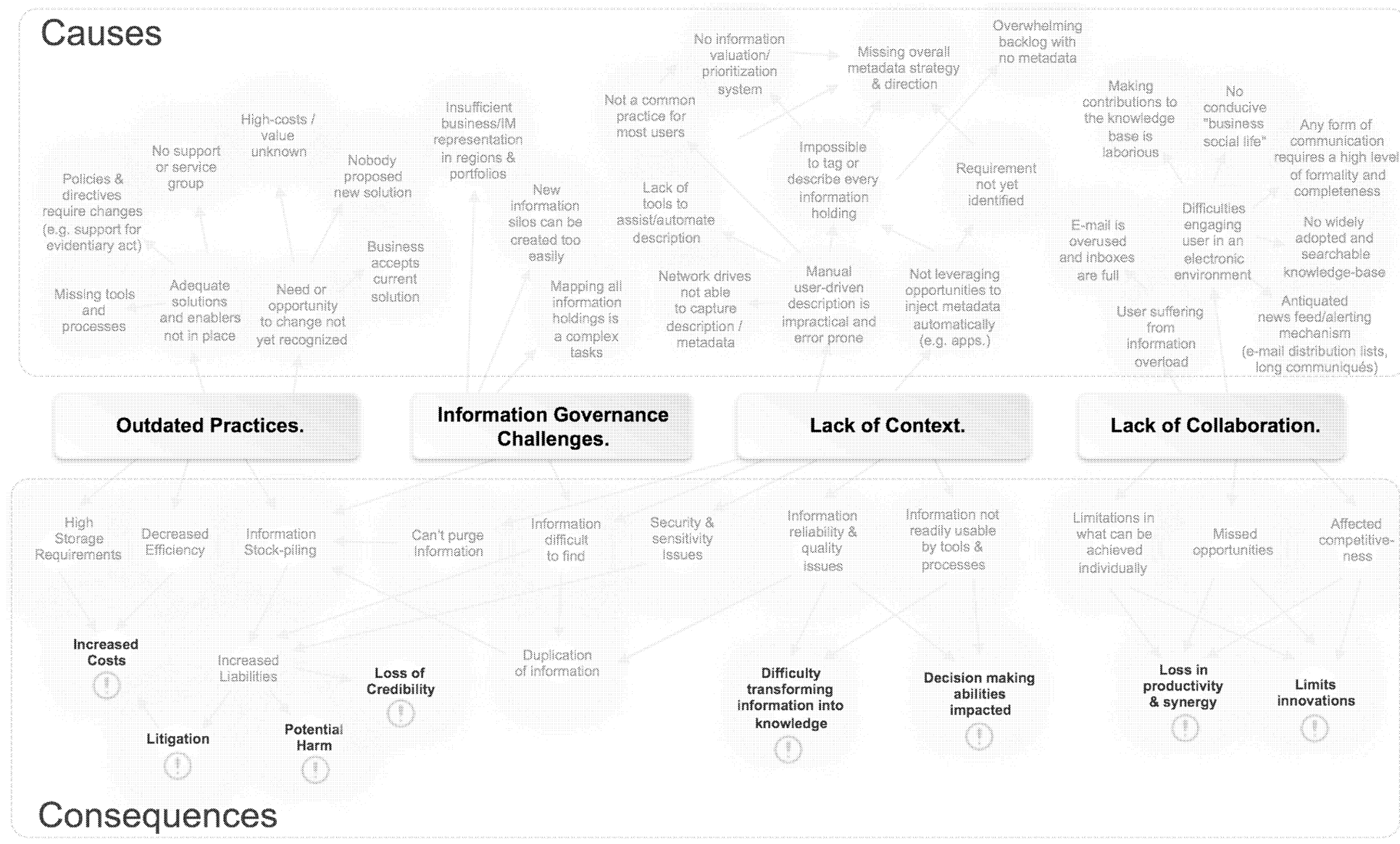
- ✓ ***Identify and promote collaborative networking opportunities using Apollo capabilities***
 - Collaboration reference model and patterns
 - Early adopters project
- ✓ ***Increase quantity and availability of IM and Apollo training and coaching***
 - Develop Training Strategy
 - Develop a Train-the-Trainer approach
 - Expand power-user training
 - Develop a self-service training/tutorial portal
- ✓ ***Create Culture Change Management strategy***
 - Develop a Change Management Plan that will help improve our "Information Culture and Awareness"
 - Establish the IM Guides / Influencer network
- ✓ ***Increase connectivity and integration capabilities***
 - Mobile solutions (Apollo Mobility assessment e.g. Blackberry, Off-site)
 - Apollo business-app integration capability requirements
 - Integration of Apollo to Enterprise Search Capabilities

For further details on these proposed actions, please consult Appendix C – Detailed Action Plan.

To see the proposed actions in context to overall activities of the strategy, please see Appendix A – EIM Strategic Roadmap.

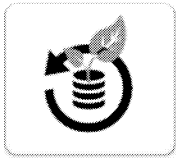
CBSA – Enterprise Information Management (EIM) Strategy – Page 28

10 APPENDIX B – IM Landscape: Root Cause Analysis



11 APPENDIX C - Detailed Action Plan

11.1 Strategic Direction 1

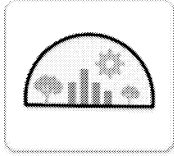


Goal: An information accountability framework that encourage desirable behavior in the valuation, creation, storage, use, archival and deletion of information.

<u>ID</u>	<u>Action</u>	<u>Duration</u>	<u>Owner</u>	<u>Alignment</u>
-----------	---------------	-----------------	--------------	------------------

<u>SD1.1</u>	<u>Develop</u> National IM Performance Management & Reporting Framework	4m	EIMD
SD1.1.1	<u>Design</u> tracking and measuring method for our performance at managing our business information holdings	2m	
SD1.1.2	<u>Propose</u> and seek IMC endorsement to create framework in order to track the management of paper and electronic records.	1m	<i>In support of IM MRAP 4.2 - 31/12/2016</i>
SD1.1.3	Engage Corporate Affairs Branch for guidance and advice in the creation of a meaningful IM Performance Management Framework aligned with the Agency Performance Summary.	0.5m	<i>In support of IM MRAP 4.1 - 30/10/201</i>
SD1.1.4	<u>Identify</u> key performance indicators for information management well defined and monitored	0.5m	
<u>SD1.2</u>	<u>Strengthen</u> IM Roles and Responsibilities	4m	EIMD
SD1.2.1	Review IM Roles, Responsibilities and Accountabilities <ul style="list-style-type: none"> • <i>Establish Information and Data Stewardship</i> • <i>Strong governance and understanding of roles at all levels</i> 	1m	<i>In support of IM MRAP 1.2 - 31/06/2016</i>
SD1.2.2	<u>Develop</u> information accountability delegation model	2m	<i>In support of IM MRAP 1.5 - 31/07/2016</i>
SD1.2.3	<u>Develop</u> communication plan	1m	<i>In support of IM MRAP 1.3 - 31/07/2016</i>
SD1.2.4	<u>Present</u> communication plan to EC	-	<i>In support of IM MRAP 1.6 - 30/09/2016</i>
<u>SD1.3</u>	<u>Perform</u> Information / Data holdings environment scan	12m	EIMD
SD1.3.1	Build a comprehensive Inventory of the Agency's information holdings	12m	
<u>SD1.4</u>	<u>Continue to work towards compliance to the GC Policy suite</u> <ul style="list-style-type: none"> • IM Support for elimination of paper forms • GC Recordkeeping directive • Implement Open Government Service to Canadian • CBSA Open Data Risk Assessment framework 	Ongoing	EIMD

11.2 Strategic Direction 2



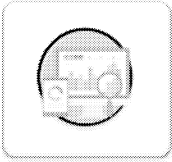
Goal: Build an **engaging experience** through an **efficient Information Ecosystem** for the Agency

<u>ID</u>	<u>Action</u>	<u>Duration</u>	<u>Owner</u>	<u>Alignment</u>
-----------	---------------	-----------------	--------------	------------------

SD2.1	<u>Re-launch</u> Apollo for business onboarding and adoption	18m	EIMD
SD2.1.1	<u>Improve</u> system performance	4m	
SD2.1.2	<u>Simplify</u> information structure and rules	3m	
SD2.1.3	<u>Transition</u> clients to simplified structure	6m	
SD2.1.4	<u>Upgrade</u> Apollo to latest product iteration (Content Suite 2016)	3m	
SD2.1.5	<u>Develop</u> information migration strategy & methodology	3m	
SD2.2	<u>Optimize</u> business information flows through enabling technology	23m	EIMD
SD2.2.1	<u>Initiate</u> Digitization pilots <ul style="list-style-type: none"> • <u>Develop</u> Digitization strategy (2m) • Pilot #1 (tbd) (2m) • Pilot #2 (tbd) (2m) 	6m	
SD2.2.2	<u>Assess</u> automated metadata tools, auto-classification, etc. for staged implementation <ul style="list-style-type: none"> • <u>Write</u> Metadata & Rich Description Strategy (2m) <ul style="list-style-type: none"> • Increase the usability and manageability of our business information through rich description • Metadata capture and generation is automated • Common Metadata strategy in place • <u>Pilot</u> Auto-Classification Solutions (6m) • <u>Pilot</u> Metadata automation Tools (3m) 	11m	
SD2.2.3	<u>Initiate</u> automated workflows	3m	
SD2.2.4	<u>Pilot</u> Electronic signature integration	3m	
SD2.3	<u>Initiate</u> Shared Drive clean-up and shut down	19m	EIMD
SD2.3.1	<u>Develop</u> strategy and methodology (3m)		
SD2.3.2	<u>Work</u> with partners to clean-up and shutdown (16m)		
SD2.4	<u>Modernize</u> the way we do recordkeeping & Lifecycle Management	11m	
SD2.4.1	<u>Develop</u> Information valuation and Prioritization system <ul style="list-style-type: none"> • New <i>value & risk</i> based framework and solution for electronic recordkeeping • Focus on Business/Information Process Optimization 	2m	
SD2.4.2	<u>Develop</u> new Records Disposition Strategy & Process	3m	
SD2.4.3	<u>Internal</u> Policy Review & Update	3m	
SD2.4.5	<u>Strengthen</u> foundational records support by identifying and disseminating retention and disposition timeframes across regions	3m	<i>In support of IM MRAP 3.3 – 30/09-</i>

for records activities.	2016
-------------------------	------

11.3 Strategic Direction 3



Goal: Transform the Agency’s capacity for data governance, business intelligence, and advanced analytics to drive better outcomes and decisions.

The defined action plans for the *Data Analytics Initiative* and *Open Government Action Plan* are summarized as part of this EIM Strategy; for full details and context please see respective surrogate documents

Data Analytics Initiatives: [LINK](#)
Open Government Implementation Plan (OGIP): [LINK](#)

<u>ID</u>	<u>Action</u>	<u>Duration</u>	<u>Owner</u>	<u>Alignment</u>
-----------	---------------	-----------------	--------------	------------------

SD3.1 Data Governance

SD3.1.1 2016-2017

- Establish Data Governance Centre
- Complete Business Data Model - Phase II
- Launch Open Government Implementation Plan (OGIP) 2016

SD3.1.2 2017-2018

- Continue to address data integrity priorities
- Operationalize Business Data Model
- Release planning of data and information, OGIP 2017

SD3.1.3 2018-2019

- Ongoing data governance, quality control
- Ongoing maintenance
- Ongoing delivery of data and information, OGIP 2018

SD3.2 Business Intelligence

2016-2017

- #### **SD3.2.1**
- Establish Integrated Data Warehouse (IDW)
 - Define requirements for Integrated Performance Reporting (IPR) tool

2017-2018

- #### **SD3.2.2**
- Establish Integrated Data Warehouse (IDW)
 - Define requirements for Integrated Performance Reporting (IPR) tool

SD3.2.3 2018-2019

- Ongoing data acquisition and service delivery
- Project implementation and iterative delivery

SD3.3 Advanced Analytics

2016-2017

- #### **SD3.3.1**
- Ongoing data acquisition and service delivery
 - Project implementation and iterative delivery

2017-2018

- #### **SD3.3.2**
- Implement operational analytics environment
 - Expand data science capacity

2018-2019

- #### **SD3.3.3**
- Ongoing people management, maintenance

SD3.4 Open Government

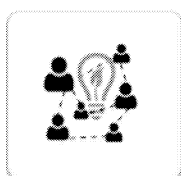
SD3.4

SD3.4.1 2016-2017

- Identification and cataloguing of data for Open Government

	<ul style="list-style-type: none"> • Execute the Agency's Methodology for Establishing a Data Inventory • Develop the required tools to support the management of the inventory and the publishing of datasets • Execute the Dataset Release Plan • Develop methodology for the information inventory • Endorse and approve new Open Government policies and protocols • Propose investment business case for non-structured information conversion (i.e. machine readable format)
SD3.4.2	2017-2018 <ul style="list-style-type: none"> • Conduct information inventory and associated Information Release Plan
SD3.4.3	2018-2019 <ul style="list-style-type: none"> • Focus on the release of Open Information

11.4 Strategic Direction 4



Goal: Instill the right values to create a collaborative culture where information is treated as a strategic asset in support of efficient border management.

<u>ID</u>	<u>Action</u>	<u>Duration</u>	<u>Owner</u>	<u>Alignment</u>
-----------	---------------	-----------------	--------------	------------------

<u>SD4.1</u>	<u>Identify</u> and promote collaborative networking opportunities using Apollo capabilities	4m	EIMD	
SD4.1.1	Collaboration reference model and patterns <ul style="list-style-type: none"> • Make it easier for people to <u>author, share and discover</u> information <ul style="list-style-type: none"> • Convenient electronic Team Workspaces • Usable document management features • Ability to find information throughout all repositories reliably • Wikis & Discussions • Allow people to connect and follow other's social business streams <ul style="list-style-type: none"> • Easily find other user's profile and connect with them • Enterprise Social Pulse (Timeline, Alerting & Notification, Followers, etc.) • Instant Messaging • Tasks & Team Work Tracking 	1m		
SD4.1.2	Early adopters project <ul style="list-style-type: none"> • Collaboration Pilot 1 (tbd) • Collaboration Pilot 2 (tbd) • Collaboration Pilot 3 (tbd) 	3m		
<u>SD4.2</u>	<u>Increase</u> quantity and availability of IM and Apollo training and coaching	11m	EIMD	
SD4.2.1	<u>Develop</u> Training Strategy	1m		
SD4.2.2	<u>Develop</u> a Train-the-Trainer approach	3m		
SD4.2.3	<u>Expand</u> power-user training	1m		
SD4.2.4	<u>Develop</u> a self-service training/tutorial portal	6m		
<u>SD4.3</u>	<u>Create</u> Culture Change Management strategy	11m	EIMD	<i>In support of IM MRAP 2.3 – 30/11/2016</i>
SD4.3.1	<u>Develop</u> a Change Management Plan that will help improve our "Information Culture and Awareness" <ul style="list-style-type: none"> • Communication plan • Training and Coaching • Mission Values 	5m		
SD4.3.2	<u>Establish</u> the IM Guides / Influencer network	6m		
<u>SD4.4</u>	<u>Increase</u> connectivity and integration capabilities	7m		
SD4.4.1	Apollo Mobility assessment	1m		
SD4.4.2	Apollo business-app integration capability requirements	2m		
SD2.4.3	Integration of Apollo to Enterprise Search Capabilities	4m		



Canada Border
Services Agency

Agence des services
frontaliers du Canada



CBSA Information Management Strategy

Information Management Committee (IMC)

Information Science and Technology Branch (ISTB)

August 23, 2016

Apollo # 3908207

PROTECTION • SERVICE • INTEGRITY

Canada



Agenda

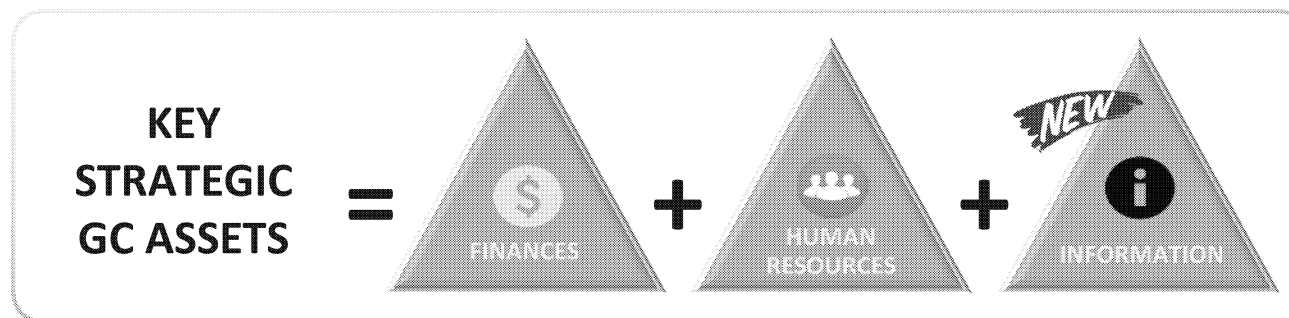
- Value Proposition
- The Changing Information Environment
- The CBSA IM Vision
- IM Principles
- 3 Year IM Strategy
- 2016/17 Action Plan Highlights
- Risks / Challenges
- Summary
- Annexes



Value Proposition

Information is a Business Resource (like Human Resources and Finance). Not managing it is not a viable option:

- Information can enable us and overwhelm us. There is such a thing as “Too much information”
- Everything we do within the Agency starts with information and generates more information
- The Agency renders decisions every minute using “Information”



TBS Vision of GC Strategic Assets



Desired Outcomes of Information Management Strategy

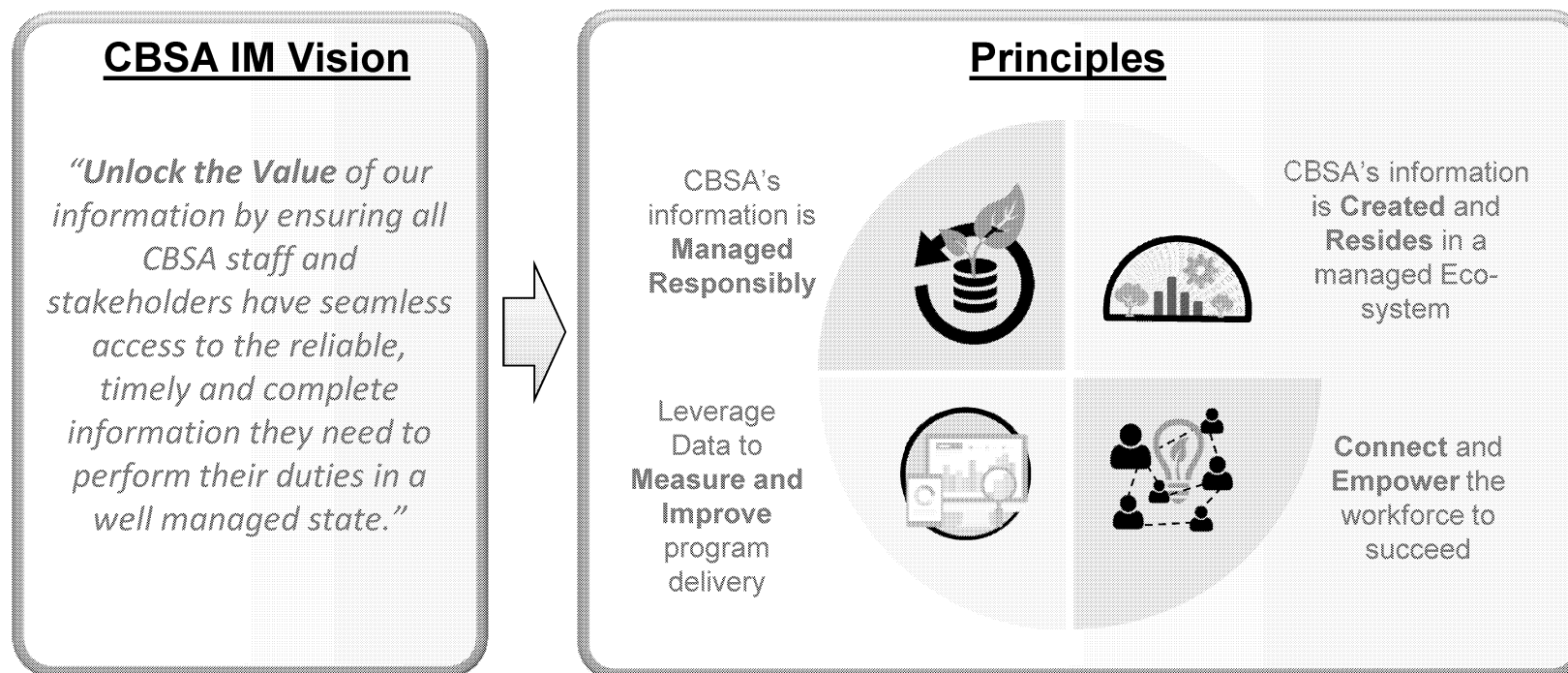
- Globally, the information environment has become increasingly complex and challenging to manage.
- Tools and techniques are evolving but fall short of optimizing Agency Information as a critical resource
- The IM strategy drives the paradigm shift from traditional IM approaches and solutions to what is and will continue to be required moving forward in the public service

Domain of Activity	Current State	Desired Outcome
EIM is a foundational business support	Compliance-focused, primarily reactive involvement in business processes and operations.	Proactively involved with business clients (as early as planning stage), focused on improving information flows and availability of information.
EIM Services supports the business in managing Agency information	Mandated and difficult enterprise-wide solutions. ("Thou shalt comply" mindset)	Relevant, reliable, and efficient services, tools and solutions provided to business client. ("Business comes first" mindset)
Management of information is focussed on high value information resources	All unstructured information treated as equally important making it difficult to focus resources and efforts strategically.	Risk-based approaches successfully applied to minimize on-going management of transitory information and focus resources on information of business value. (Focus efforts on high-value resources)
Agency information is lifecycle managed to ensure high value information is not lost	Reliance on unproven and limited functionality proposed by content management system vendor.	Innovative use of a wide spectrum of solutions to iteratively and progressively develop the Agency's capability to perform information lifecycle management. (slowly move yardstick forward)
Information Management program activities and initiatives are designed around CBSA business needs	Sequential records based process with little client input, narrow focus, multi-year deliveries, risk of rejection	Incubation, progressive release, early adopters, starting with small changes, building up support and user comfort.
Information Resources of Business Value are identified, mapped and organized for efficiency and productivity	Spread across multiple unstructured repositories, low-visibility, out-of-context. Low usability of the information.	Centralized, highly integrated enterprise content management platform, metadata-rich. High business usability of information.



Vision





- The Information Management Committee (IMC) approved Principles (April 2016) lay the foundation for an IM strategy that supports the creation of an **Agency Information ecosystem of managed repositories, a connected and networked workforce, and alignment to Government of Canada (GC) IM policy and direction.**





CBSA IM Principles

The CBSA IM principles provide the framework to help us understand and organize our efforts and develop :

IM Principles	Key Deliverables
 <p>CBSA's information is Managed Responsibly</p>	<p>Create an information accountability framework that encourages desirable behavior in the valuation, creation, storage, use, archiving and deletion of information.</p>
 <p>CBSA's information is Created and Resides in a managed Eco-system</p>	<p>Continue Agency adoption of Apollo, increase management of email business information and decommissioning of network drives in support of Agency business and alignment to GC.</p>
 <p>Leverage Data to Measure and Improve program delivery</p>	<p>Mature the Agency's capacity for data governance, business intelligence, and advanced analytics to drive better risk management, enforcement and decisions.</p>
 <p>Connect and Empower the workforce to succeed</p>	<p>Action organizational culture change through communications, marketing, and workshops to facilitate the sharing of information and knowledge as a strategic asset for efficient border management.</p>



3 Year IM Strategy Road Map

On-going improvement and activities in support of:
 IM Education / Awareness, Roles and Responsibilities,
 performance monitoring and measurement.

• 2016/17

- Continue user on-boarding of Apollo in HQ and on-board regions
- Continue to assist users in the management of email information of business value in support of Email Transformation Initiative
- IM Services environmental scan and alignment with new GC IM Strategy
- Action all internal CBSA and Office of Comptroller General Audit deliverables
- Initiate Network Drive clean-up and shut down “campaign”
- Transformation of EIM Division – HR Plan and Financial Sustainability
- Begin executing the CBSA Open Government Implementation Plan
- Identify releasable data sets for Open Government and begin release
- Publish CBSA conceptual information architecture V1
- Implement the CBSA Data Analytics Business Case

• 2017/18

- Continue standardization of IM functions across the regions
- Identify and map data / information repositories with information architecture that reflects business model
- Modernization of RecordKeeping and information lifecycle management
 - Initial electronic disposition via Apollo.
- Begin release of identified data sets for Open Government

• 2018/19

- Revise 3 year IM strategy based on results achieved and GC direction.
- Migration of Apollo to GC Hosted GCDOCS environment
- Increase integration with information systems and technology
- On-going release of approved data sets for Open Government



2016/17 Action Plan Highlights

As part of the overall 2016-2018 Strategic Direction Roadmap, the following activities are proposed for the current fiscal year (2016/17 one-year plan):

IM Transformation Activities

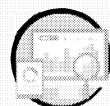


- Environmental scan to identify gaps between current IM services and TBS Government of Canada IM Strategy (Q3-2016 / Office of Comptroller General (OCG) Audit Deliverable)
- Develop new IM Service Model and catalogue of services (Q4-2016 / CBSA Audit Deliverable)
- Propose common IM functions / competencies / job descriptions / classification levels throughout the CBSA (Q1-2017 / OCG and CBSA Audit Deliverable)
- Develop Human Resources Plan, Training and Development Plan and Investment proposal in support of ongoing IM capacity and competency profile (Q3-2016 / OCG and CBSA Audit Deliverable)

Strategic Activities



- Continue business on-boarding and adoption of Apollo – improve performance and stability (Q4-2016)
- Initiate Shared Drive clean-up and shut down (Q4-2016)



- Execute the approved CBSA Open Government Implementation Plan (OGIP) (Q4-2016)
- Implement the CBSA Data Analytics Business Case (pending EC approval) (Q4-2016)



- Develop IM Performance Management Framework and scorecard – seek IMC endorsement (Q3-2016 / CBSA and OCG Audit Deliverable)
- Review IM Roles, Responsibilities and Accountabilities within the Agency (Q2-2016 / CCBSA Audit Deliverable)
- Develop IM Roles, Responsibilities and Accountabilities communication plan – present to Executive Committee (Q2-2016 / CBSA Audit Deliverable)



- Increase IM Awareness activities including communications, workshops, outreach in support of organizational culture change. (Q1-2017)
- Increase quantity and availability of IM and Apollo training and coaching (Q1-2017)



Risks / Challenges

Risks	Description	Proposed Mitigation
Employee Awareness	Disengagement of workforce in the management of information.	Ongoing awareness and communications. Specific controls to facilitate information management including obligation to save in Apollo, read only network drives, no email attachments.
External Service Delivery	Delivery date of GCDPCS Hosted Service not expected before 2018-19	Continue with CBSA hosted solution while continuing to align with service provider vision/architecture
Treasury Board Secretariat IM Strategy	Potential upcoming changes to TBS GC EIM Strategy, Policy and Directives	Proactively engage and collaborate with central agencies through key committees to monitor trends and changes
Funding	Insufficient resources to support EIM program and enable transformation over multiple years	Prioritize strategic action plan and focus resources on key business support activities
Data vs Information	Structure databases are subject to same information lifecycle management policy requirements	Complete the information and data architectures with a focus on Mission Critical services and systems



Summary



"... Information is a source of learning. But unless it is organized, processed, and available to the right people in a format for decision making, it is a burden, not a benefit."

- William Pollard

Recommendations for IMC:

- Endorsement of 3 year IM strategy
- Provide on-going advice and guidance as 1 year action is implemented
- Provide ambassadorship role through visible senior management "leading by example" and setting of IM expectations
- Monitor IM Strategy progress quarterly at IMC and annually at Executive Committee

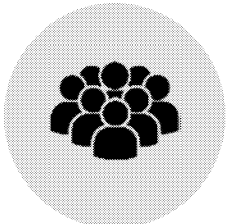
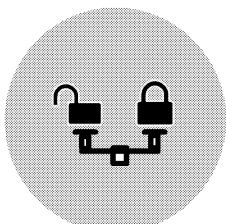
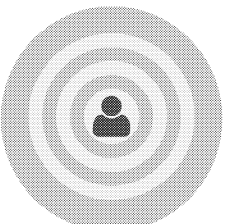
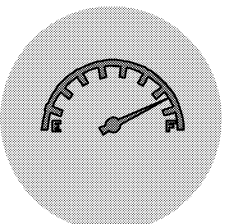
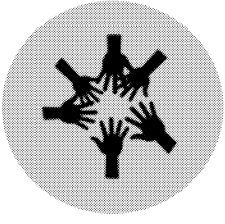


ANNEXES



Guiding Principles

CBSA EIM adopts Guiding Principles defined in the *Government of Canada Enterprise Information Management Strategy*, as follows:

 <p>Enterprise-First</p> <ul style="list-style-type: none"> • Created once, reused numerous times • Single, aligned, enterprise asset • Consistent, standardized, interoperable, GC-wide • Scalable, rapid deployment 	 <p>Open and Secure</p> <ul style="list-style-type: none"> • Open by default – transparent, accountable, proactive • Authoritative and trusted by all • Safeguarded for security, privacy, confidentiality • Monitored to prevent leaks • Protected for future generations 	 <p>User-Centric</p> <ul style="list-style-type: none"> • Accessible when and where needed • Customizable tools and resources • Minimized learning requirements for users • Automated, digital processes, including disposition 	 <p>Smart</p> <ul style="list-style-type: none"> • Informed decisions, minimized risks • Leveraged to maximum potential • Cost-effective, efficient solutions • Facilitated reuse, classification, sharing, analytics • Continuously improved to ensure quality 	 <p>Networked and Collaborative</p> <ul style="list-style-type: none"> • Enabler for a collaborative, flexible workforce • Enhanced expertise and innovation • Fast, government-wide search and retrieval
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TBS Mandated Roles and Responsibility

- TBS' proposed IM Policy Suite Reset (2016) introduces key changes in the Roles and Responsibilities for the management of information:
 - *Designates the Chief Information Officer (CIO/IMSO) as the official responsible for providing leadership, coordination, and oversight responsibilities for the management of information in support of the development and delivery of Government of Canada policies, programs, and services.*
 - *Proposes a new Directive on Managing Information (4 mandatory procedures and 2 standards) and delineates the responsibilities of departmental CIO, senior management and individuals in the management of information.*
- New responsibilities for Deputy Heads and the CIO include (*as per Annex B-C of the proposed policy suite reset*) :
 - Establishing practices and procedures for consistent management of information resources in their department that align with government-wide direction (Annex B 1.1);
 - Ensuring that decisions on the development and delivery of policies, programs, and services, and the evidence supporting those decisions, are documented (Annex B 1.2);
 - Integrating IM requirements into the development and delivery of policy, program, and services, evaluation and reporting (Annex B 1.3);
 - Aligning investments in IM tools, solutions and systems with Government of Canada direction (Annex B -.4);
 - Approving a departmental IM plan that details the activities to be undertaken for the management of information in the department and for meeting government-wide IM objectives (Annex B 1.10).
 - Developing and maintaining a departmental IM plan that details activities to be undertaken to manage the information of the department and to meet government-wide IM priorities and objectives (Annex C 1.1).
 - Identifying information resources of business value held by the department based on an analysis of departmental functions and activities (Annex C 1.2).
 - Establishing and maintaining designated corporate repositories, classification structures, and metadata to facilitate search and retrieval of information resources of business value (Annex C 1.3).
 - Performing regular disposition activities for all information resources according to documented processes (Annex C 1.4)



Impetus for Change

Internal Drivers

- Aging information flows and business processes
- Information is born / created in unmanaged electronic repositories
- Information stockpiling
- Lack of oversight on most of the Agency's information holdings
- Limited ability to facilitate bringing together new ideas (crowdsourcing) and engagement of the workforce
- Limited Reach of Information Management support services
- Difficulty implementing efficient Electronic Records Management processes

External Drivers

- TBS GC Enterprise IM Strategy and Policy on Information Management
- TBS's Directive on Recordkeeping prescribed level of maturity
- TBS's Directive on Open Government
- LAC issuance of Records Disposition Authorities (RDA) and information disposition requirements
- LAC no longer be accepting information of enduring value created in paper format after 2017
- As of July 2015, LAC no longer stores records that are not of enduring value. Boxes of paper are being returned to the originating departments



Agency internal audit of IM (2015-16)

- CBSA participated in a horizontal internal audit of IM carried out in 2015-2016 by the Office of the Comptroller General (OCG).
- The audit has identified that the Agency has governance and some monitoring frameworks in place to support IM; however, IM is currently delivered as a number of initiatives instead of an Agency-wide program.
- As a result, there is an ongoing risk that IM will not be integrated as a foundational business support for the Agency's activities.
- Opportunities exist to enhance roles and responsibilities, accountabilities, procedures, and reporting and monitoring practices for IM.
- The audit reported several findings and issued the following recommendations:
 1. Further define and communicate IM responsibilities and accountabilities;
 2. Implement and communicate standard IM tools, guidance and best practices across the Agency;
 3. Develop and implement Agency-wide operational and human resource plans for IM; and
 4. Monitor and Report IM on a regular basis.



CBSA's information is Managed responsibly

OUTCOMES

- The Agency's information is treated and managed as a Strategic Resource (like Human and Financial Resource)
- Information Accountabilities, Roles and Responsibilities are effectively delegated and monitored
- Agency information in multiple repositories is identified and accounted for
- Increased compliance and efficiency through business process improvement



BENEFITS

- Improved Decision Making
- Decreased costs and liabilities
- Increased health of the Agency's information ecosystem
- Strong Management Accountability

CURRENT GAPS

Operational

- Regional IM roles and responsibilities are often not acknowledged or defined
- Paper / electronic information unmanaged and orphaned
- Data quality challenge - no identified stewardship roles
- Data is siloed and inaccessible to most of Agency

Compliance

- Lack of information lifecycle management is a compliance risk

KEY INITIATIVES

- National IM Reporting Framework
- Strengthen IM Roles and Responsibilities
- Perform Information / Data holdings environment scan
- Continue to work towards compliance to the GC Policy suite
- Organizational change management plan in support of collaboration and information sharing



CBSA's information is **created** and **resides** in a managed Eco-system

OUTCOMES

- Users have access to new value-added features
- Older technologies can be phased out (i.e. network drives)
- Information is born within a modern enterprise content management platform (GC Standard)
- Information is effectively connected to a business process.



BENEFITS

- The agency's Information is richer, easily accessible and re-usable
- Access permissions and collaboration is facilitated
- Increased user productivity and efficiency
- Information Management tasks can be integrated and transparent for users
- Currently unused or under-used information assets can be leveraged
- Organizational knowledge and memory is protected

CURRENT GAPS

Operational

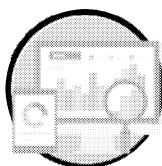
- Network drives, Outlook, local drives and PSTs currently largest repositories of unstructured and currently unusable business information resources
- Multiple stand alone and aging systems

Compliance

- Information not managed per GC regulation
- No efficient process in place to efficiently purge information – increased liability and clutter

KEY INITIATIVES

- Re-launch Apollo for business onboarding and adoption
- Optimize business information flows through enabling technology
- Shared Drive clean-up and shut down
- Capture business information in siloed repositories
- Modernize the way we do recordkeeping and Lifecycle Management



Leverage Data to **Measure and Improve** performance

OUTCOMES

- Improved program delivery
- Identifying opportunities for greater efficiency across Agency
- Single version of the truth
- Increased opportunity for organizational learning



BENEFITS

- Improved situational awareness and decision-making
- Increased competitiveness and efficiency
- Reduced Agency risk posture
- Opportunities for cost avoidance and savings

CURRENT GAPS

Operational

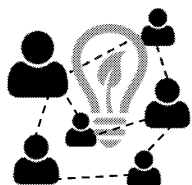
- Challenge in accessing data required to perform time sensitive front-line operations.
- Poor data quality affects the Agency's ability to make the right decisions.
- Limited workforce skillsets.
- Technology challenges.

Compliance

- Requirement to continuously measure and improve performance.
- Open Government Directive requires proactive release of information and data to the public.

KEY INITIATIVES

- Data acquisition involving the identification and prioritization of CBSA, GC, and third-party data
- Establishing a task force dedicated to privacy and security
- Applying best practices from B5 partners
- Workforce skill development and recruitment
- Execute the approved CBSA Open Government Implementation Plan (OGIP)



Connect and Empower the workforce to succeed

OUTCOMES

- The workforce operates within collaborative networks
- The Agency's IM culture and behavior is predictable and effective
- The Agency's human resources are empowered with accessible and usable information resources



BENEFITS

- Increased productivity and facilitated operations
- A high performance information ecosystem
- Increased idea generation, creativity and knowledge sharing

CURRENT GAPS

Operational

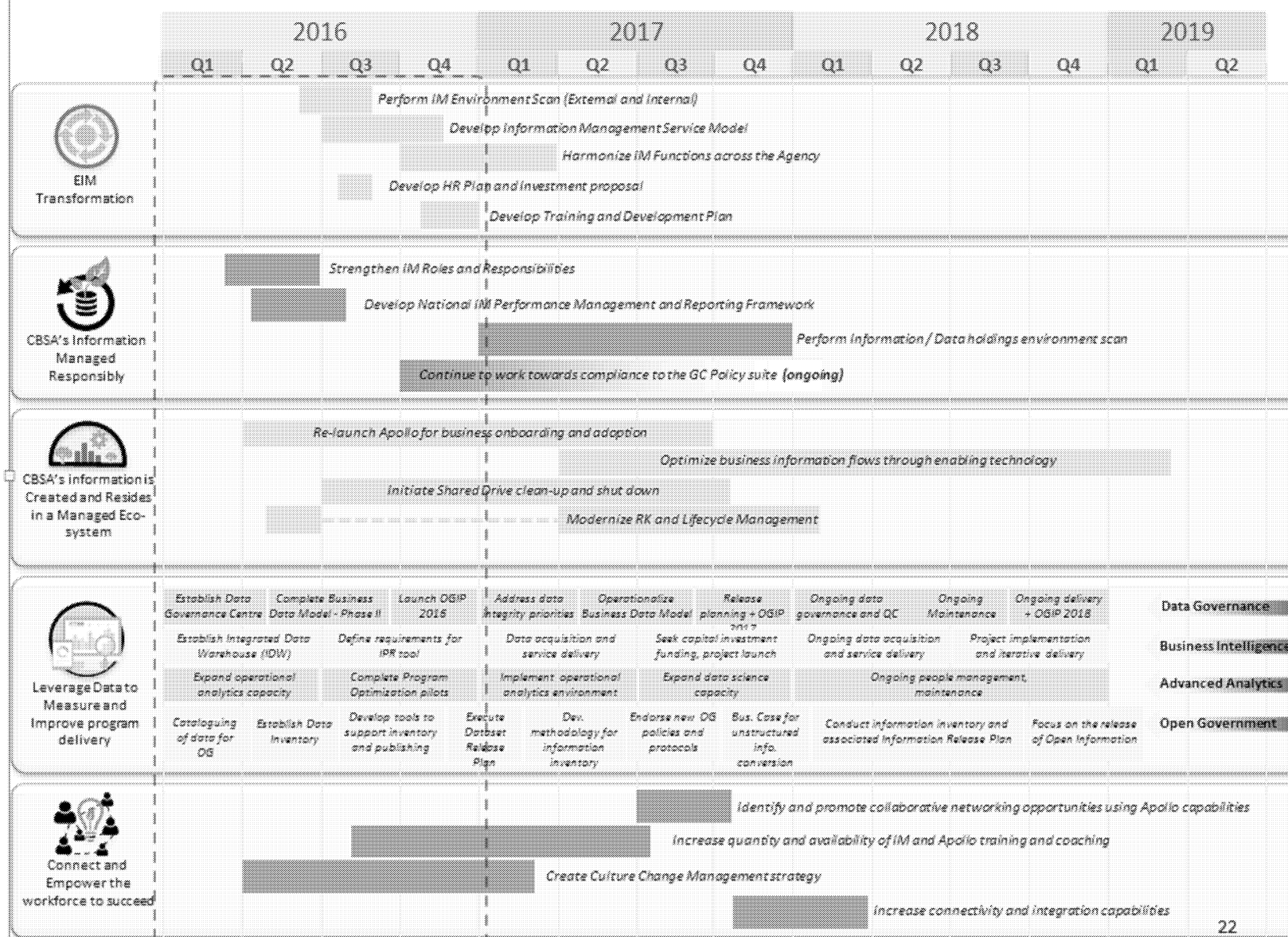
- Information currently in siloes
- Outdated business processes inhibits efficient business collaboration

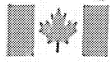
Compliance

- IM is viewed as an EIMD responsibility
- Open Government and Open by Default not part of culture.

KEY INITIATIVES

- Identify and promote collaborative networking opportunities using Apollo capabilities
- Increase quantity and availability of IM and Apollo training and coaching
- Create Culture Change Management strategy
- Increase connectivity and integration capabilities





Canada Border
Services Agency

Agence des services
frontaliers du Canada



Science and Engineering Directorate

Border Technology Division

Division Report 2016-08 (TR)
February, 2016

Predictive Analytics Pilot in the
Traveller Stream

Sofia Auer and Darren
Coughtrey

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Executive Summary

Identifying risk, and doing so early, is a key component of the CBSA's mandate. One key method of risk assessment is through the Agency's Commercial and Traveller Targeting Programs. Targeting is currently supported by automated, *expert-based systems* in both the commercial and traveller streams.

Data mining in particular, uses machine-learning algorithms, with limited human intervention, to find faint patterns or relationships between data elements, in large, complex data sets, that are of business interest. At a high level, the use of data mining techniques

The Enforcement and Intelligence Directorate of the Programs Branch has worked closely with the Science and Engineering Directorate (S&E Lab) in ISTB to pilot predictive analytics at the CBSA, for pre-arrival risk assessment within the air traveller stream. The full scope of work for this pilot was completed within 10 months; 7 months were dedicated to preparing the data for predictive analytics, and 3 months were dedicated to advanced modeling.

Several machine-learning models were created and tested, with the best one giving very promising results. By making use of a relatively small amount (i.e., only API and PNR data) of the information available to targeters in their decision-making process, it was possible to correctly predict up to of the *known* illicit cases. These results were achieved

The results achieved can thus be seen as a lower bar as to what is possible.

The S&E Lab will proceed to phase two of this pilot in an attempt to address some of the more difficult aspects of this work and to improve the already promising results. Although continuing this work will require a concerted effort from many different parties, the promising results of this pilot suggest that this work will be well worth the effort. This pilot has proved the value of this paradigm shift, and that devoting a focused effort to this type of work could lead to enormous value for the Agency. Moreover, these techniques are applicable to many other of the CBSA's lines of business

and so these initial efforts can also be seen as a powerful opportunity to educate the Agency at large, as to the power and value of such work.



Background

Identifying risk and doing so early is a key component of the CBSA's mandate. One key method of risk assessment is through the Agency's Commercial and Traveller Targeting Programs. These programs rely on

Targeting is currently supported by automated, *expert-based systems* in both the commercial and traveller streams.

techniques, the Agency can sift through large data by using predictive analytics in an automated fashion,

Predictive analytics includes advanced mathematical and statistical techniques, which look at historical data to make predictions about future events. The goal of such work is to use machine-learning algorithms, with limited human intervention, to find faint patterns or relationships between data elements, in large, complex data sets, that are of business interest. Because the analysis does not start with a specific hypothesis, the algorithms may unbiasedly identify trends that would otherwise go undetected. At a high level, the use of data mining techniques

Given the large volume of travellers and conveyances coming to Canada, along with the ever increasing collection of data, and rapidly developing technologies, the Canada Border Services Agency (CBSA) must begin to leverage predictive analytics to assist in the automation of risk assessment.

Exploratory work in the field of predictive analytics was carried out by the Science and Engineering Directorate, in the Information, Science and Technology Branch (ISTB), between 2010 and 2013, in the

The Enforcement and Intelligence Directorate of the Programs Branch has worked closely with the Science and Engineering Directorate (S&E Lab) in ISTB to pilot predictive analytics at the CBSA, for pre-arrival risk assessment in the air traveller stream. The full scope of work for this pilot was completed

within 10 months; 7 months were dedicated to preparing the data for predictive analytics, and 3 months were dedicated to advanced modeling. This report describes the methodology used by the AA section, the results obtained through machine learning techniques, and the applicability of machine learning at the CBSA.

Methodology

Data Extract: Passenger Information System (PAXIS) and Integrated Customs Enforcement System (ICES)

In order to facilitate risk assessment in the traveller stream,

(the tools used to access and analyze the data).

In order to pilot a predictive analytics in the air traveller stream, the S&E Lab required access to the same data described in the previous paragraph. The team

However, due to the legal and technical requirements of the *Protection of Passenger Information Regulations* (PPIR) and the commitments made to the EU, the data extract request was modified at the request of the data owners (Programs Branch) to exclude the transfer of [redacted] As a result, the Enterprise Data Warehouse Division in ISTB extracted [redacted] from the production environment onto the Enterprise Data Warehouse (EDW), the week of June 15, 2015, and access to this data was given to the S&E Lab.

Data Matching: Matching Records from ICES to PAXIS

The development of a predictive model depends heavily on matching the this is because data mining requires information about a passage

. This means that a small set of passages will be classified as resultant (i.e., all entries in ICES that correspond to an entry in PAXIS). All other records in PAXIS that do not contain a corresponding record in ICES will be categorized as non-resultant.



In an effort to link the ICES data to its corresponding API/PNR data, the following set of rules were applied by the EDW Division. The rules were applied to data from three tables in PAXIS and one table in ICES.

If all eight rules above, matched an ICES record to a PAXIS record, then this record would have qualified as a match; otherwise no match would have been made. Note that of the seizures recorded in ICES for the period of December 1, 2013 to May 31, 2015, matches were made.

Given that by this point, much work had already been done, the S&E Lab did not ask the EDW section to implement any relaxed criteria. A maximum of extra matches would not have provided enough of an improvement compared to the amount of work that would have been required to implement such changes.

The figure below shows, very simply, that matching rules were created and applied to link up records in ICES with their corresponding API/PNR data.

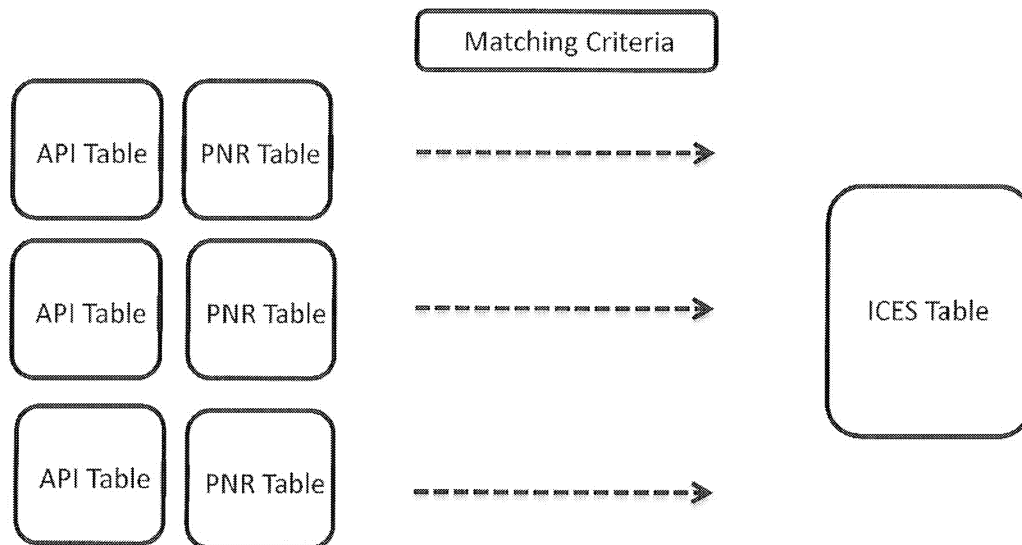


Figure 1. Matching process between API, PNR and ICES datasets.

Data Reduction: Reducing Dataset to Unique Passages

Final Data Preparation Step

The previous step was required in order to identify all of the data elements from the PAXIS side that corresponded to a particular seizure on the ICES side. All travellers recorded in ICES and matched to a record in PAXIS based on the rules described in the previous section, have several corresponding primary keys. These primary keys, in theory, should allow for the ICES and API/PNR tables to be stitched together, to end up with a large dataset such as the one that is pictorially oversimplified below.

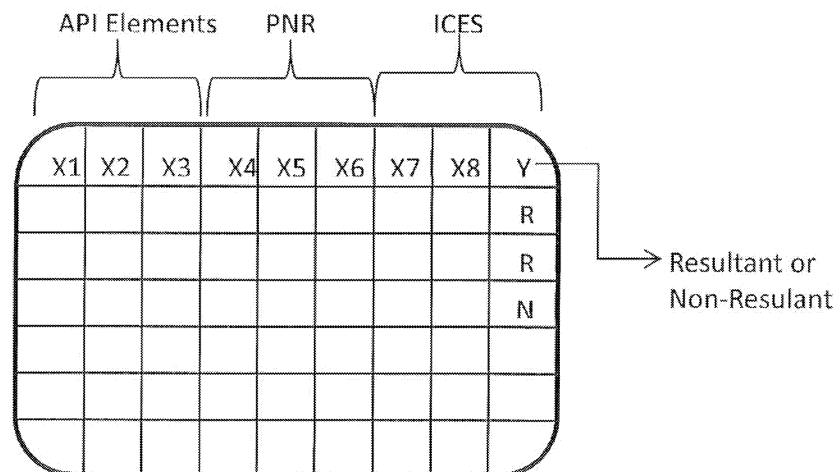


Figure 2. The different datasets linked together into a complete, full dataset.



However, the previous process is complicated by the following relationships:

As a result, logic had to be formulated in order to reformat the data, so as to end up with one row for each unique passage into Canada. Two IBM Modeler streams were independently created so as to confirm the logic of one stream with that of the other, and vice versa. This was done as a way to validate the logic prior to model building, and as a way to build in error and quality checks. Both streams follow very similar (almost identical) logic and rules. Once the data preparation was completed, the model-ready dataset contained:

- Approximately 37 million unique passages into Canada (which falls in the range that is reported by the CBSA, in the Consolidated Management Reporting System)
- Approximately (data from the API/PNR and ICES tables)
- Roughly of the above 37 million passages corresponded to travellers that were caught with contraband

The data preparation steps described above were very challenging and time consuming activities (~ four of the six months allotted for the pilot);

Future iterations of this pilot would require the above data preparation logic to be repeated, but would be more streamlined.

Graphical Exploration of the Model-Ready Dataset

At this point, some descriptive statistics will give some context to the raw data that was used to create predictive models. Below, some basic statistics are reported for the full ICES results from the 18-month period of the data for this pilot, as well as for the subset that had matched to API/PNR data. Table 1, below, shows the top ten types of resultants within the dataset;

Table 1. Top 10 seizures within the model-ready dataset.

Type of Resultant	Percentage	Count
Currency/Monetary Instrument		
Tobacco Products		
Clothing & Footwear		
Jewellery		
Other Controlled Drugs		
Furs, Skins, & Leather Products		
Marihuana		
Alcoholic Beverages		
Watches		
Cocaine		
<i>Subtotal</i>		
<i>Others Resultants</i>		
Total	100.00%	

Figure 4 below, highlights that the contraband caught, follows

This figure also shows that the number of seizures made per month, follow a distribution.

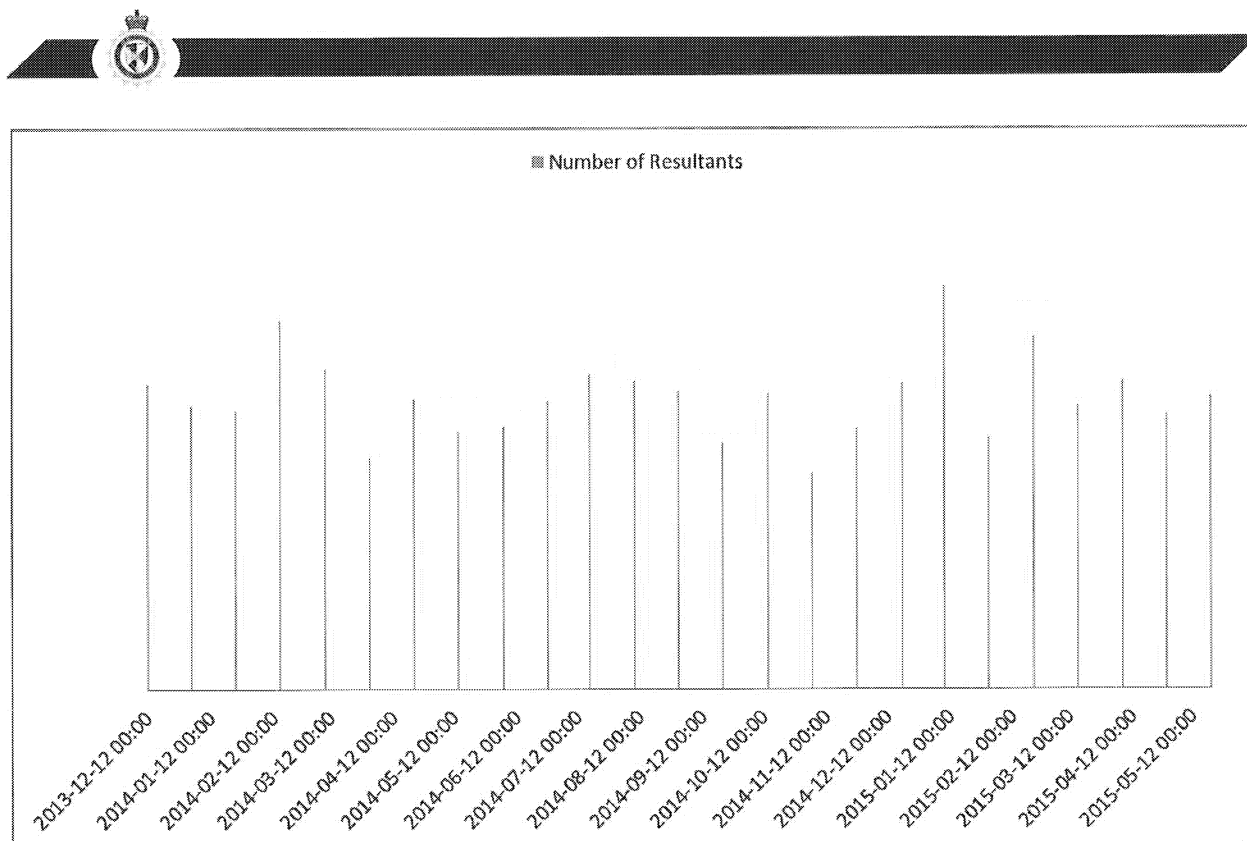


Figure 3. Resultant matches between December 1, 2013 and May 31, 2015.

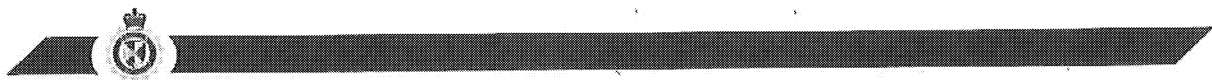
Table 2 below shows that (in the model-ready dataset) were reported (in ICES) as being referred by a BSO. This trend is consistent when all seizures are considered (for the 18-month period), as seen in Table 3. Digging even deeper still, of all resultants in the same period were associated with in ICES.

Table 2. Contraband seizures in the model-ready dataset, by referral type.

Type of Referral	Percentage	Count
Total	100.00%	

Table 3. Total seizures between December 1, 2013 and May 31, 2015, by referral type.

Type of Referral	Proportion	Percentage	Count
	1	100.00%	



Variable Creation

Next, the model-ready dataset described above, with the raw data variables (i.e., variables in their raw form pulled directly from API/PNR, and ICES tables), was used to create new elements for use in the model building phase.

Some variables in the dataset, in their raw state, are unusable for modeling. A prime example of such a variable would be any On their own, are not usable for modeling purposes, because they don't say much in and of themselves. However, in comparison with other in the data, they could be quite valuable.

The S&E Lab focused their efforts on the creation of data elements that could lead to interesting patterns for model creation. An opportunity exists for different areas within the CBSA, to get involved here, particularly those responsible for creating the scenarios for Scenario Based Targeting (SBT). With their extensive knowledge and experience, they may be able to suggest potentially useful information and thus help to create potentially useful variables as inputs to the modeling step, in future iterations.

Modeling – Training and Testing

At this point, the dataset was ready to be modelled. The first step in the model building phase requires splitting the dataset up into two sets: one for "training" and one for "testing". A training set is a subset of the full data, which is used to create a model. A testing set, is the other subset of the data (what is left over), which is used to test the model that was created in the training set. The reason the data is split in this fashion, is because it is important to test the model using new data (i.e., data that the model has not "seen", or which has not been used to create the model).

The data was split so that one year of data was used for training, and the last six months was used for testing. Splitting the data in this manner allows for the results to be used as a true simulation of what would have happened had the models created been implemented in production on the 366th day, and run for the following six months. Of the passages, approximately were used to train models, and were used to test the models that were built. In the training set, of the records, there were roughly resultants, and in the testing set, of the records, there were roughly resultants.

Several different machine-learning techniques were used to build models with the training dataset; these include decision trees, decision lists, logistic regression and neural networks. These models were all generated without human intervention and their outputs are solely data driven; the data drives the patterns that are found by the algorithm. Due to the time constraints in this pilot, most of the efforts were spent on outputting a model that would be interpretable and that would showcase the potential for straightforward integration into current targeting systems (SBT). As a result, many different decision trees were built. One in particular gave the best results, in comparison to all models built.

A **decision or classification tree** is a predictive model that acts as a decision tool and is straightforward to understand and follow. In short, a decision tree uses the observations about a particular item, and relates it to an outcome. In this pilot for example, a decision tree maps several observations about a particular passage (i.e., API/PNR data from a particular passage) and relates it to a risk category (i.e., low risk/high risk, or non-resultant/resultant). Along with the prediction of risk level, a decision tree outputs a confidence measure in the predictions; these confidence values can subsequently be used to determine thresholds that would highlight which passages and passengers to focus on.

Depicted below is an excerpt from the best model that was generated. The full tree was too large to be presented here.

Figure 4. An excerpt of the best model (a decision tree) built and tested.

An example of how this part of the tree can be read, is as follows:



Results

Best Model – A Decision Tree

This section describes how the best model was assessed, as well as the implications for the Agency. Recall that the testing set is a subset of data that is used to assess how well the model that was created, performs. The test set that was used, included approximately [redacted] passages into Canada, of which [redacted] were resultant (i.e., passages that corresponded to an ICES seizure for contraband). The general results of this work are depicted graphically below.

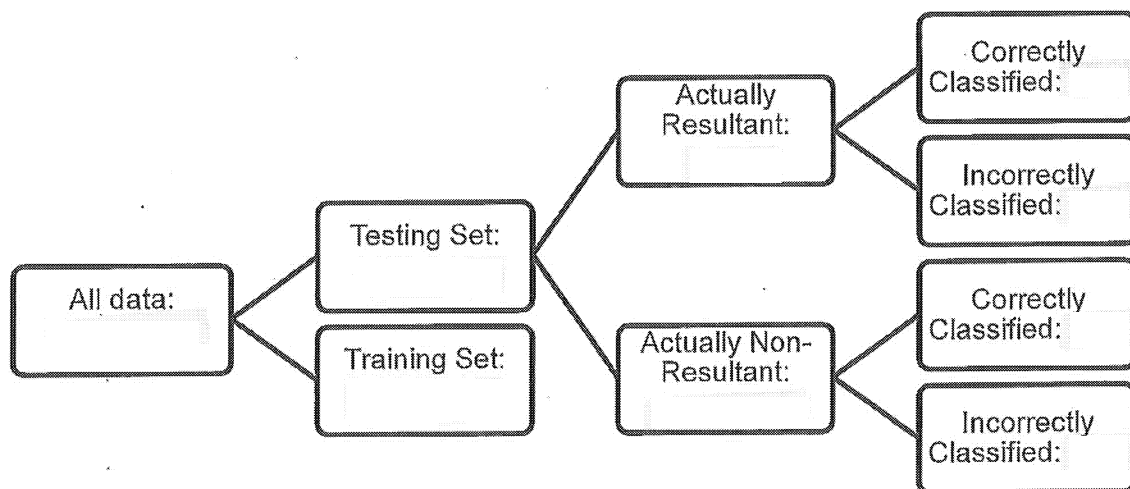


Figure 5. Assessment of the best model that was created.

Put into matrix form, the above results can be summarized as follows:



Table 4. Confusion matrix showcasing the results of the best model created.

		Predictions	
		Predicted Non-Resultant	Predicted Resultant
Actuals	Actual Non-Resultant		
	Actual Resultant		

The results above show that the best model that was built, can correctly predict [redacted] of the non-resultants and [redacted] of the resultants. That is, [redacted] This has significant implications for the Agency.

A perfect model would predict 100% of the non-resultants as non-resultants, and 100% of the resultants as resultants. So, in the above case, the off-diagonals (in red) are the errors; [redacted] of the resultants were incorrectly predicted as non-resultants and [redacted] of the non-resultants were incorrectly predicted as resultants. If this model were implemented solely on its own, without additional intelligence or BSO intervention, [redacted] For example, implementation of this model, alone, would result in roughly [redacted] The obvious question that follows is, "How big is [redacted] More importantly, "Would [redacted] pose a problem operationally?" If it is considered too large of a number, there are ways to reduce it (which will be discussed next). However, relying only on the decisions of a model would not be advisable at this stage.

It is also important to note that these results do not imply that all [redacted] incorrectly classified cases of contraband smuggling would have gotten away had this model been used in the CBSA's production environment. One has to remember that these [redacted] cases were caught using the combined strength of the CBSA's interdiction efforts

That said, what the above results are truly showing is that, using this initial model, in only [redacted] of cases was the risk of contraband smuggling prior to the traveller's arrival in Canada not identified.

Model Based on a Threshold of Confidence

Given the results in the previous section, the goal of this next step was to create a more feasible and realistic model solution



To this end, the S&E Lab decided to employ a fairly simple technique: every 'resultant' prediction with a corresponding confidence value equal to [redacted] would remain a 'resultant' prediction; all other 'resultant' predictions would at this point be re-categorized into a 'non-resultant' prediction.

The table below shows that this process reduced the false positive errors (from [redacted] down to [redacted], however, in doing so, the false negative errors increased (from [redacted] to [redacted]). The positive point to highlight is that the thresholded model, if implemented on its own, would now result in roughly [redacted] instead of [redacted]. More importantly however, is the ability of this model to still pick out [redacted] of the resultants, using only two sources of data, and doing so pre-arrival.

Table 5. Confusion matrix showcasing the results of the best model, thresholded (based on high confidence predictions).

		Predictions	
		Predicted Non-Resultant	Predicted Resultant
Actuals	Actual Non-Resultant	[redacted]	[redacted]
	Actual Resultant	[redacted]	[redacted]

Assessing Results in a Business Context

The metrics used in the previous section to assess the performance of the statistical model are informative, but do not easily highlight how the model could impact the CBSA's business processes. As mentioned, [redacted]

The problem with this line of thinking is two-fold:

1. Thresholding requires weighing the cost and benefits of relying only on the best possible "risky" predictions (i.e., there could be many accurate predictions occurring below the selected threshold).
2. The intention of this pilot project is not to say that there would be [redacted]. That said, a larger amount of predicted resultants might be acceptable, given that the predictions would only serve to populate a worklist.



With these points in mind, it could be argued that the [redacted] resulting from the predictive model could actually be more operationally feasible than thought to be, at first glance. To belabor the point,

[redacted] and was thus impossible for the purposes of this pilot.

The following diagram attempts to highlight the difficulties in comparing the work presented in this report, against the CBSA's current targeting process. The figure below points out that the common evaluation metrics,

[redacted] the figure below should highlight the fact that these two levels of evaluation are quite different.

Figure 6. Comparison of current targeting process against the predictive analytics pilot process.

The most appropriate comparison between the CBSA's current process and this pilot would look at the



Due to this fact and in attempt to ensure that proper comparisons were made to fairly evaluate this pilot project, only self-contained statistical measures were relied upon. The following section will present another such metric that will point to the efficacy of the methods described.

Assessing Results against a Random Process

A standard evaluation metric in almost any data mining project evaluates the performance of the created models against the performance of a random selection process. Clearly, this method of evaluation is less informative than comparing a model against the statistics generated by the current targeting process. However, comparison to random *does* provide an effective and self-contained way of assessing the performance of the models.

The current targeting process and the process generated in this pilot, serve as different levels of screening, which in turn filter through the data received to identify records of interest. Without any levels of screening, the only option left to identify records of interest would be a random selection process; this can be considered a baseline from which to make a fair comparison. Clearly, if any screening process, be it traditional targeting or statistical modelling, performed worse than random, there would be no use in relying on the decision-making ability of the system. That said, in using a random process as an evaluation metric, the ideal result is to find improvement, or "lift" from the random baseline.

In this pilot, a random baseline can easily be established. Recall, the six-month testing set was composed of approximately [redacted] records, close to [redacted] of which were resultant for contraband. If a record were picked at random from the test population, there would be a [redacted] likelihood of that record being a resultant case. See below for the exact calculation.

1. Choosing at random within the test set:

$$\frac{\text{Resultants in Test}}{\text{Passages in Test}} =$$

2. Using the model:

$$\frac{\text{Correctly predicted resultants}}{\text{Total predicted resultants}} =$$

better than random)

3. Using the model with high confidence resultants:

$$\frac{\text{Correctly predicted resultants}}{\text{Total predicted resultants}} =$$

better than random)

Similarly, once the test data is run through the statistical model, records predicted resultant, This means that of all records predicted resultant by the statistical model, there is a of a given record being resultant. This is better than

Finally, if the test data is run through the thresholded statistical model, out of the predicted resultant, were truly resultant. This means that of all records predicted resultant by the thresholded model, there is a of a given record being resultant. This is better than the performance described above.

but it does provide a baseline. With the models performing better than it is clear that there is potential benefit to employing these sorts of data mining techniques. Moreover, when paired with the fact that many details have been identified that could greatly improve this preliminary work, the comparison made in this section could be seen as a strong reason to continue this analysis, as discussed in the next section.

Conclusions and Future Work

The goal of this pilot was to investigate the efficacy of using machine-learning techniques on pre-arrival data in order to identify cases of probable contraband smuggling.

it was indeed possible to correctly predict up to of the known illicit cases.



Moreover, it is worth restating that these results were achieved in the face of certain obstacles that most certainly made this work much more difficult.

The S&E Lab proposes that this work proceed with a follow-up round of analysis in attempt to address some of the more difficult aspects of this work, and to attempt to improve the already promising results. An additional benefit to another round of analysis is that it will provide the opportunity to make a more concerted effort in terms of gathering statistics

Perhaps the main point of improvement for the next phase of this work has to be centred on the

For example, are collected by the CBSA at the border through IPIL. Each traveller entering Canada has his/her passport scanned, generating data regarding the individual in question, which is then saved in CBSA databases.

This information

In order to advance this work with a second round of analysis that includes the improvements previously mentioned, the S&E Lab will require continued assistance from various areas of the Agency. Assistance will be needed from (but not limited to):

1. **Operations Branch:** Work with NTC subject matter experts for variable creation and perhaps API/PNR data preparation.
2. **Programs Branch:** Support required for the Round 2 data extract, including extract of new fields.
3. **ISTB:** Support from EDW for the Round 2 matching process, and possibly flattening of the data.
4. **Data Analytics Work Group:** Support and direction in terms of socializing the concepts and value of this type of work.

The work described in this report can truly be seen as a lower bar as to what is possible. That said, although continuing this work will require a concerted effort from many different parties, the promising results of this pilot suggest that this work will be well worth the effort. This study has proved the value of this paradigm shift, and that devoting a focused effort to this type of work could lead to enormous value for the Agency. Moreover, these techniques are applicable to many other of the CBSA's lines of business and so these initial efforts can also be seen as a powerful opportunity to educate the Agency at large, as to power and value of such work.



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Science and Engineering Directorate

Border Technology Division

Division Report 2015-01
February, 2015

**Deliverable #1 – Use of IBM
SPSS Modeler for Text Mining
of Cargo Descriptions.**

Darren Coughtrey

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Executive Summary

Currently, prior to the arrival of goods to the country, the only description of the physical goods that is received is provided in a free-form text field. This study uses commercial off the shelf products that the Agency has made a major investment in, to be able to extract standard commodity descriptions from the free-form text in order to be able to use it in an automated fashion. The results that are presented are compared with previous work performed by the Advanced Analytics Section, and suggest that actionable information can indeed be extracted from this textual information.

Purpose

In order to both secure the country's borders and facilitate legitimate trade, many attempts are being made to automate historically manual processes overseen by the Agency. One of the most critical processes being automated by the CBSA is the pre-arrival risk assessment of commercial cargo bound for Canada. The Agency has been working towards automation of the risk assessment process since its inception in 2001, which has resulted in the creation of TITAN, an automated system aimed at aiding the human targeter's search through the waybills of incoming freight conveyances in both the Marine and Air modes.

TITAN (to be renamed 'PHOENIX' by the completion of e-Manifest) has been continually improved upon since its initial implementation in 2004, and upon its completion, the eManifest project will result in TITAN being extended to both Highway and rail Modes. Moreover,

¹ Division Report 2012-11 (TR)



An important point to note within the context of this report is that many risk rules, such as the one described in the preceding paragraph, are relatively trivial to implement.

the creation/implementation of these rules really only requires the Agency experts to maintain a list of the ISO Codes for being flagged by the rule in question. Because this information is so easy to input, the tends to be transmitted very consistently and error-free by the trade community. Paired with the fact that comparing incoming ISO Codes with those being flagged by the CBSA experts is an operation that is trivial to implement, it is safe to say that these sorts of data elements form a solid basis for risk rule creation.

However, with such a variety of risks under the Agency's purview, not all of the risk rules created for use within the automated risk assessment process run on clean, codified data.

In comparison to the more straight forward rules based on present many problems in terms of automation;

rules based on text

² <http://www.iso.org/iso>,



Many of these questions have been well documented and analyzed³. With the exception of a previous report⁴ generated by the Science & Engineering Directorate's Advanced Analytics Section, much of the work done in this area has centered on identifying the issues, as opposed to posing solutions to them. The following sections, however, will outline a potential solution using the technology readily available within the CBSA. Firstly the methodology will be outlined at a high level, followed by an analysis, and presentation of the results.

An important aspect of this study was to make use of the text analytics functionality within the IBM SPSS Modeler data mining suite. In recent years, the Agency has made a significant investment in this technology, and made an additional purchase of a component specifically aimed at making use of textual information in an automated fashion. In the future, the CBSA may be able to make use of IBM suite, which would allow work done in Modeler to be published and used directly in the Agency's production systems. Viewed in this context, the results described herein may represent the horizon of the Agency's risk assessment capabilities.

With regards to textual data, the aforementioned software is aimed at allowing for the creation of statistical models that could highlight patterns and trends within the text, which could then be used for automated tasks like classification (i.e., categorizing the text into different categories), or sentiment analysis (i.e., attempting to extract a sense of what the text is saying about a given topic). In order to help with these tasks, the software provides various built-in subject specific dictionaries, and text mining algorithms that can be used in conjunction with the data manipulation operations and data mining techniques that are built into the more standard portions of the suite.

Methodology

To begin with, one must understand the high-level processes that get used with the IBM SPSS Modeler's text mining functionality. The first thing to understand is the software's use of dictionaries; these are predefined inputs to the text mining process, which essentially define the words recognized by the text mining software (i.e., any word not appearing in the chosen dictionary will be ignored in the subsequent processing). That being said, the term 'dictionary' seems a little less appropriate than using the term 'vocabulary' for the chosen lexicon. Nevertheless, the software comes with several preinstalled dictionaries, many of which are subject specific (banking, marketing, etc.), and not

³ Division Report 2013 - 01(TR), Division Report 2014 - 02(TR)

⁴ Division Report 2013 - 03(TR)



necessarily applicable for the CBSA's purposes. For this reason, this study makes use of the standard English dictionary provided with the software.

The software does give the user the ability to add any domain specific language to the lexicon that may be lacking. However, for reasons that will be described in the discussion after the presentation of the results, doing so for this particular piece of work would have most likely resulted in a waste of effort in that the number of terms needed to be extracted already overwhelms the software as is.

Despite these potential set backs, what will be shown is that there is potential for optimism when dealing with these textual cargo descriptions. The results given will show that there is indeed potential to extract enough information from the text in order to give a more standard description of the commodity the text is attempting to describe. In pairing this with previous work⁵ performed by the Advanced Analytics Section, there is reason to view this particular problem as solvable with the proper technological framework in place.

To begin, a certain amount of data pre-processing was required. In attempt to attain some form of standardization amongst the textual descriptions, two broad data cleansing steps were undertaken. Firstly, all numerical characters were stripped from the descriptions, simply because, if provided correctly, the commodity should be described in the text by words. Indeed, numbers may appear for the purposes of relaying the quantity of the goods being described, but the commodity itself should be present as text string somewhere in the description.

The next pre-processing step was to remove all punctuation characters from the text. This step might seem somewhat dubious, in that IBM SPSS Modeler does provide the capability for some level of Natural Language Processing, which would make use of punctuation, in order to tag the parts of speech within the descriptions (tagging the nouns, adjectives, names, etc.). Due to past experience in using a Natural Language Processing package on similar descriptions, the removal of punctuation was deemed a justifiable step. The problem that these descriptions are rarely properly formed sentences and are often merely just lists of nouns, making any effort in performing Natural Language Processing largely a waste of time and computation.

Once these basic data cleansing operations were performed, the data was then fed through the IBM Text Mining module. As mentioned above, the module makes use of the selected dictionary (i.e., the basic English dictionary in this case) to weed out words (from the text) that don't appear in the vocabulary, and to perform several more advanced processing steps (identifying synonyms, finding multi-word concepts, etc.).

An important point to note is that the Text Mining functionality within the IBM suite gives two ways of generating a text mining model for use within a data mining stream; the first is aimed at novice users and allows them to generate a model directly with little user-interaction, while the second method is interactive, and requires the user's input to generate the model. A key point in this study, with regards to these two options, is that the more simplistic option allows for the extraction of only 1000 concepts, and the more complex, interactive option extracts up to 10,000 concepts. In both cases, these

⁵ Division Report 2013 - 03(TR)



'concepts' are typically single words, or perhaps two-word groups that occur commonly together, such as "car parts", or "apple juice", etc. In order to foreshadow problems to be discussed later on, consider the fact that there are one million possible standardized codes for commodities in the United Nations Harmonized System at the six-digit level alone.

That aside, once the concepts were extracted, the resulting model was then used to turn the data into a so called 'Bag of Concepts'. This means a new variable was created for each concept, which took on the value of 1 or 0 depending on whether or not, the given concept appeared in each piece of text. It is critical to note that this process dramatically increases the size of the data, and as will be shown, can be burdensome on memory requirements. Prior to creating the 'Bag of Concepts', the data set had a single text-based data element, whereas at this point in the process, the data set would potentially have 10,000 different binary variables.

That being said, once the 'Bag of Concepts' is generated, the analysis and data manipulation techniques included in the base module of IBM SPSS Modeler can be used to extract patterns and trends to use for predictive purposes. This means that standard data mining algorithms can be used to produce predictive models like decision trees and neural networks. A particularly useful type of analysis for high dimensional, binary data is what is known as 'Market Basket Analysis', which can be done within IBM data mining suite using the Apriori algorithm. This particular algorithm was discussed in a data mining workshop session⁶ put on by the Advanced Analytics team, and so in what follows, familiarity with this concept, is assumed, but at a very high level. The relative rarity/commonality of the different concepts in the data (which is used to train the model) is used to create association rules that have a guaranteed predefined confidence and support level. That is,

If $A \rightarrow B$ is a rule generated by the algorithm:

1. The confidence of the rule will be the number of descriptions in which **A & B** appear divided by the number of descriptions in which **A** appears. This measures the strength of the rule.
2. The support of the rule is the number of times **A & B** appear together in a description divided by the number of descriptions. This measures the rarity/commonality of the rule.

Note that in many applications, rare rules are often seen as non-useful, and so the threshold for the minimum support of any rule is set relatively high in order to ensure that the conclusions drawn from the rules occur relatively frequently in the training data. In this context, however, rare rules are potentially useful. Keep in mind that the goal in this study is to take any description, regardless of wording, and extract a standard form for the commodity being described. That being said, if certain words are used, even infrequently, to describe a certain product, it could be beneficial in being able to account for the immense variability in the ways that any product can be described.

With this in mind, it is also useful to note the modeling software allows the user to restrict the conclusion of the rules generated by the Apriori algorithm (i.e., the right-hand side of the rule, or **B** in

⁶ Data Mining Workshop Series - # 5



the case of A->B). That being said, if a standard way to describe commodities can be identified, the software can then be used to create rules of the following form

'Concept 1' & 'Concept 2'&...& 'Concept N' -> 'Standard Definition for Commodity Y'

That is, by using the concepts extracted from the textual descriptions, it may be possible to infer a standard definition for what the text is trying to describe. This would eliminate the need of any troublesome, fuzzy matching in the automated risk assessment processes; that is, the Agency could then compare standard text to standard text.

Fortunately for the purposes of this study, the UN's Harmonized System does give standardized definitions to any commodity, and on the Release documentation collected the CBSA collects both a free-formed text description, and a standardized definition in the form of a Harmonized System Code (HS Code). This means that this data can be used to generate a rule set of the form described above. The following sections will describe the results of this undertaking, and attempts to interpret them in the light of previous work. They will also highlight the difficulties of this process, and give reason to believe that they may not be insurmountable.

Results

Indeed, issues with this approach arose almost immediately. Recall that rare rules are potentially valuable in this study, which means that the support (and even confidence) thresholds can, and perhaps should, be set low in order to cast as wide a net as possible. Initially, however, this would result in massive rule sets that would be comprised of some 10,000 to 20,000 rules. In and of itself, a rule set this size is not an issue. In fact, given the myriad of possible ways to describe a single product, it might even be expected.

Indeed, this is exactly what happened in this experiment. The data was split into two groupings, one from 2012 and one from 2013, and then 200,000 lines were selected randomly for each set. This data was pre-processed as previously described above, and Apriori models, described above, were trained



on the data from 2012. The resulting rule set was used on the data from 2013 in order to test it's the ability to generate the correct HS Code from a free-form text field.

Initially the generated rules were run against the 2013 data, and only one prediction was generated per description. Recall, there is nothing stopping multiple rules from hitting on a single description. So, to generate a single prediction, one needs only to take the prediction given by the rule with the highest confidence. Subsequent predictions can be made by taking the results of the next highest rule hits. That being said, with only one prediction being generated,

In examining the resulting predictions, it was noted that a significant number of cases had no rules fire against them, and thus no prediction was generated for such cases. If such cases were excluded, the accuracy of those left over That is to say, for those cases for which the resulting model was able to generate a prediction, the model predicted correctly with only a single prediction.

Now recall, for no rule to have fired on a particular case, it would mean that either the parameters for the model building were set too high (i.e., rules involving the concepts present in the given description did not meet the minimum support/confidence criteria), or the concepts present in the given description were not extracted when the text mining model was built. While it is possible that concepts involved were so rare that they did not appear in the 2012 training data, the more likely explanation is that the

Now, to help improve the results, and in line with the previous Naïve Bayes work, other results were generated by outputting more than one prediction per case. As in the previous study, it can be argued that doing this is still sufficient for risk assessment purposes, because in effect the model would be saying 'out of the huge number of possible commodities, I have narrowed it down a small number of possibilities, and one of them is correct with X% confidence'. The following table summarizes the results of generating up to three predictions.

	Number of Predictions Generated		
	1	2	3
All Cases included			
Cases with no Prediction removed			



What this means is that with only two predictions being generated, it is possible to correctly predict

By adding one more prediction, these results are improved another respectively. These results are on par with previous work, and most likely better for the case of generating a single prediction. This fact may be further proof of the efficacy of more complex concept extraction techniques, because although the previous work had no memory limitations, it perhaps suffers by having a very simplistic concept extraction process. Nevertheless, when taken together with previous results, this analysis does seem to confirm that it is possible to extract actionable information from this free-formed text that has caused such problems for the Agency's automated risk assessment processes.

Conclusion

Although it may not be obvious at first glance, this work can be viewed as quite positive. Moreover, this study lends credence to earlier work done by the Advanced Analytics Section. What was shown herein is that, although this initial attempt at using the IBM SPSS modeler software to process these troublesome text descriptions may not have been exact, it is possible to exploit the COTS products already purchased by the CBSA to dramatically prune the HS hierarchy into a small list of choices for a significant portion of incoming shipments.

The thing to remember here is that the limiting factor to this work and its results not the techniques themselves. There is reason to think that results would drastically improve if a larger number of concepts could be extracted. In fact, in previous work, the Advanced Analytics Section was able to use the Naïve Bayes algorithm to great effect in trying to predict the six-digit HS Code from text⁷.

Previous work also took the equivalent of one-word concepts in the IBM context, and so the work described in this report could even be seen as proving the benefit of being able to extract more complicated multi-word concepts, which was in fact a hypothesized improvement to the previous Naïve Bayes work. The point being, that if a bigger dictionary of multi-word concepts could be generated, it is possible that the correct commodity could be extracted from the text, accurately, with only the ideal of one prediction made.

The one advantage the earlier Naïve Bayes work had over the study being described herein was that it did not suffer from That being said, its allowable vocabulary was massive (i.e., a whole English dictionary with domain specific words added in), and the resulting model was able to accommodate millions of variations in the text.

⁷ Division Report 2013 - 03(TR)



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MEMORANDUM

To: Phil Lightfoot, Sofia Auer
From: Darren Coughtrey
Subject: Using Textual Data in an automated way in the CBSA
Reference: DC02112015

Introduction

Over the past several years, the Science and Engineering Directorate's Advanced Analytics team has amassed a large number of results directed at

These various projects have highlighted several overarching points that will be tied together in this memorandum. To begin with the reader must be aware of the problem that the AA team's work was aimed at addressing.

It is a well known fact that all commercial shipments bound for Canadian soil through Marine and Air travel

Many of these risk rules are straightforward because of the nature of the incoming data.

That being said the process of matching incoming data to the maintained list is a simplistic exact match on the codified elements.

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There are, however, different rules that add new layers of complexity for the Agency's automated systems due the fact that the data format does not as easily handled

The prime example of this type of rule and the focus of much of the AA team's work is the data element giving the description of the commodity being shipped to Canadian soil. Unlike codified elements described above, this particular data element comes in the form of a free-form text field with essentially no standardization. The trade chain partners are basically free to enter into this field whatever information they see fit, and unfortunately for the CBSA, they do.

Things like contact information, internal company coding, and short forms that verge on gibberish appear in the data, and it falls to the CBSA to sort this out in order to be able to make a risk determination.

The unfortunate thing, however, is that fuzzy matching on text is an *extremely* difficult task. It can be done in fairly naïve ways that aim to account for simple spelling mistakes (e.g., omitted or swapped letters), or it can be done with fairly sophisticated techniques that take into account context, structure, and grammatical nature of the words in the text.

Moreover, the difficulties with fuzzy text matching are obviously exacerbated by the aforementioned data quality issues. In a nutshell the problem is that with the myriad ways one can legitimately describe any given commodity, and knowing that the text the Agency receives is of poor quality and often contains superfluous information; what words are the CBSA's risk assessment experts to put on their tables of risky commodities?



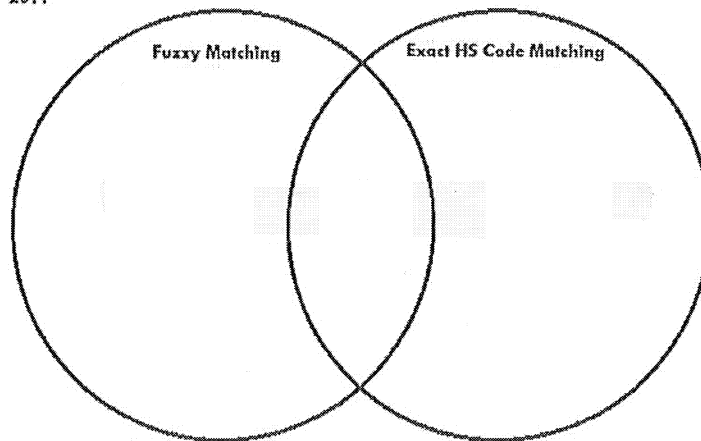
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The following sections will briefly outline the various pieces of work conducted in this regard, and will point to the associated report for the interested reader.

Risk Rule Performance

This was done because the Release sent by the importers themselves includes the full ten-digit HS Code, and because the importers face steep penalties for non-declaration or misdeclaration, this data could serve as a baseline for the analysis of text-based rules. That is, under the seemingly reasonable assumption that the received HS Codes are by and large correct, one can translate the risk rule tables from text to HS Codes, and then calculate how many shipments *should* have caused a particular rule to fire.

2011



Typically as well, it was found that the text-based rules fired far more often than risky commodities were declared on the Release documentation.



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The reader interested in such results should request the following reports from the Science & Engineering Directorate:

- Division Report 2013 - 01(TR): Deliverable #1 – Analysis of risk rule effectiveness based on HS Code
- Division Report 2014-15(TR): Analysis of risk rule effectiveness based on HS Code

Using Other Standard Codes

In certain cases, the CBSA is provided a nicely codified value for the commodity being shipped to the country prior to arrival. This is mandated when a commodity that is to be transported to Canada is listed by the United Nations to be hazardous, and in such cases the trade chain partners must submit a properly classified UN Hazardous Goods Code. This allowed the Advanced Analytics team to compare the efficacy of the text-based fuzzy matching by using the UN Code instead of the HS Code provided on the Release documentation, and indeed the results were fairly consistent with the results described in the previous section.

What was found was that there were fewer codified rule hits, lending credence to the conclusion that Due to a technical detail in the way the Hazardous Goods rules are implemented it was difficult to ascertain how many of the shipments listing a Hazardous Goods Code also had the text-based rule fire against them;

Readers interested in this result should consult the following report:

- Division Report 2014 - 02(TR): Deliverable #4 – Analysis of risk rule effectiveness based on UN Hazardous Goods Code



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Potential Solutions

Knowing that these sorts of problems existed, it was thought that another useful direction for the Advanced Analytics team's work would be to research cutting edge techniques that might serve to improve upon the current fuzzy matching process. The most promising direction this research took was to use data mining techniques to probabilistically translate the incoming text-based description into HS Codes that could then be compared to a list of potentially risky codes.

it was found that actionable information can be fairly accurately derived from the in-coming textual descriptions. More precisely, in the team's first attempt at tackling this problem, it was shown that a list of five candidate codes can be outputted with an confidence that the true HS Code would be in the list. This may sound a bit strange - typically one would like a more definitive answer - but when considering there are *a million* different possible classification at the six-digit level of the HS hierarchy, outputting a mere *five* candidates begins to look much more impressive.

This work was coded completely by the Advanced Analytics team in the Python programming language.

That being said, the next step in this analysis was an attempt to yield similar results by leveraging the procured data mining suite, IBM SPSS Modeller.

The original code (written in Python) had a distinct advantage in comparison to using the off-the-shelf Modeller software because the code could be finely tuned to the exact domain of the problem at hand. However, despite this potential lack of domain specific customization, it did turn out that the IBM suite was able to generate results roughly on par with that of the customized code. By outputting three candidate codes (note, the output list was kept this small to deal with memory issues) it was possible to have assurance that the correct commodity is in that list.

The interested reader should consult the following reports:



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- Division Report 2013 - 03(TR): An Application of Naïve Bayes to the Classification of Commercial Cargo Declarations
- Division Report 2015-01(TR): Deliverable #1 - Use of IBM SPSS Modeller for Text Mining of Cargo Descriptions.

Conclusions

This was done by analysing various risk rules, and using two internationally recognized codings (both the Harmonized System Coding and the UN Hazardous Goods Coding) for commodity information as baselines for the study.

However, most importantly, the team was able to dispel the myth that the textual descriptions are of such poor quality that they are ill suited for use in an automated context. Indeed, two different methods were employed, one using technology already purchased by the Agency, in order to extract actionable information from the problematic descriptions.

It should also be noted that with more effort, refinements and improvements to this work might be possible to bolster the results described herein. With that in mind all of the work described in this memorandum should be looked at as pointing a potential direction for the Advanced Analytics team's focus.



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eManifest Senior Project Advisory Committee Briefing

Project Update

June 15, 2015



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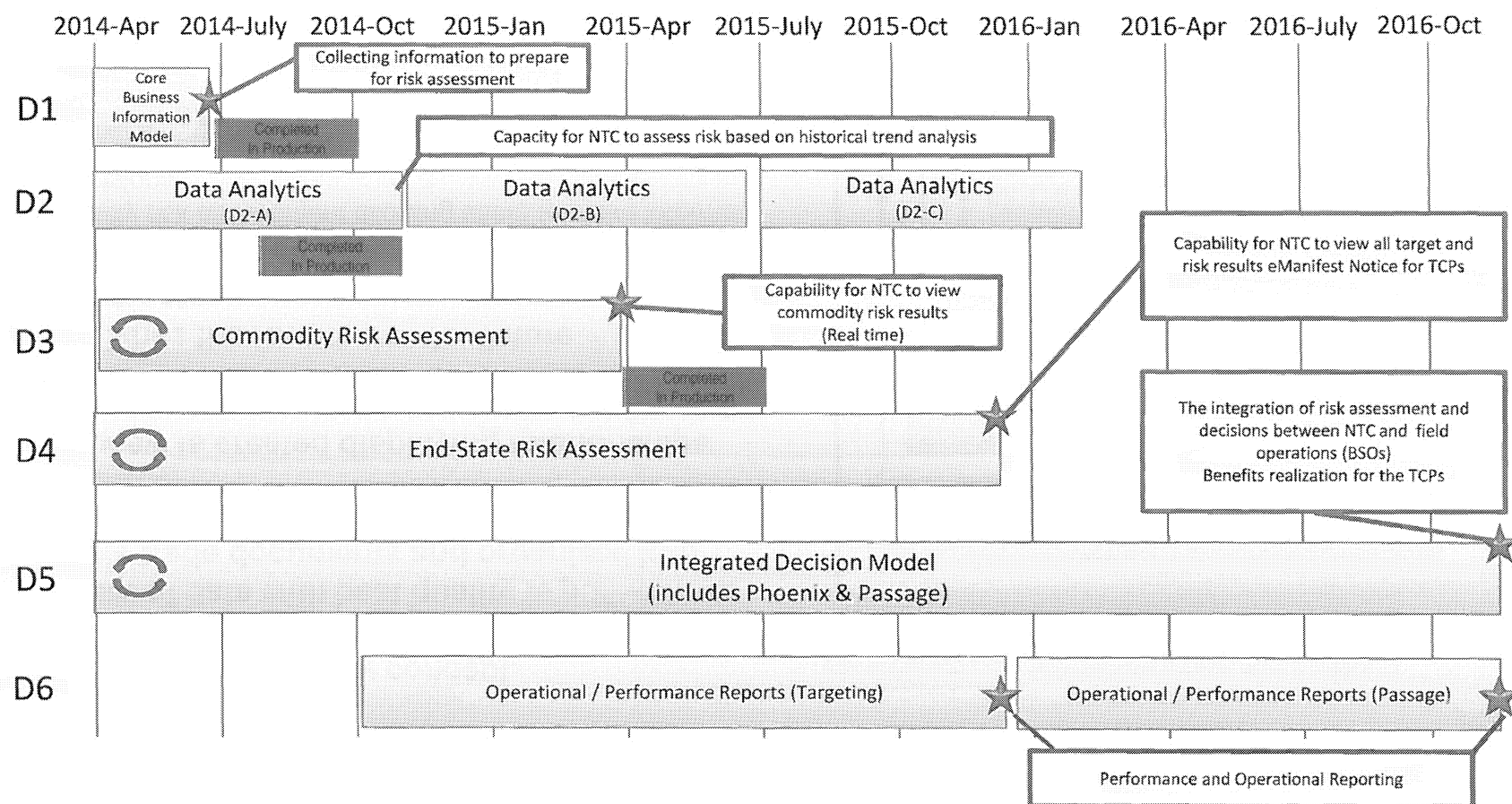


Agenda

- eManifest Deployment Approach
 - Deployment 1 – Business Information Model
 - Deployment 2 – Data Analytics
 - Deployment 3 – Commodity Risk Indicators
 - Deployment 4 – End State Risk Assessment
 - Deployment 5 – Integrated Decision
 - Deployment 6 – Performance Reporting



eManifest Delivery Approach





Deployment 1: Entity Creation & Relationship

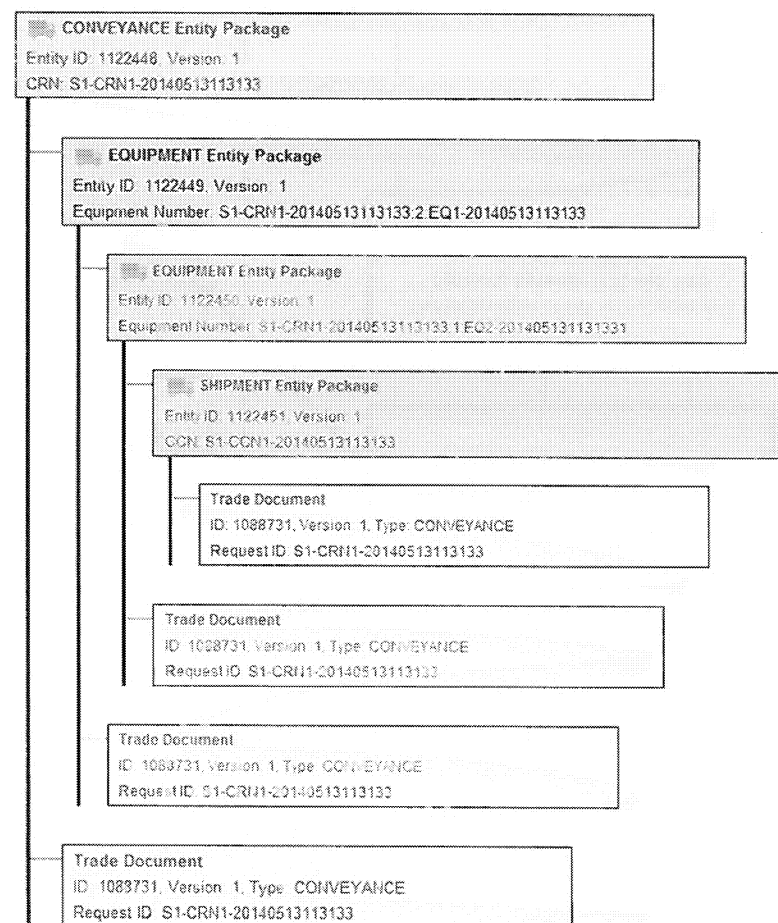
D1 introduces the entity concept.

Clusters of data with best quality is pulled from multiple trade documents and organized into entities – conveyance, equipment and shipment.

A trip view is created displaying relationships between conveyance, equipment and shipments.

Establishes the foundation for future deployments:

- Packages relevant data together to ensure timely and quality risk assessment allowing users to make informed decisions.
- Facilitating review of shipments by risk assessing and applying decisions at the entity level as opposed to individual documents.
- Risk results, decisions, referrals, and exam results are all associated to the entity enhancing the capability to perform analytics to improve future risk determination (i.e. “closing the loop”).





Deployment 2: Data Analytics

Directed Queries

Identification of shipments of interests based on Intelligence received from the National Targeting Centre (NTC).

Business Profiles

Analytical tools that seek business pattern deviations based on known characteristics of a companies importing history.

Precursor Chemicals

Analytical tool to assist targeting operations in identifying illegal shipments of precursor chemicals.

Rail Targeting

Assesses pre-arrival commercial data and assists in identifying shipments of interest in the rail environment.





Deployment 3 – Commodity Risk Assessment

- Deployment 3 is the foundation for commercial risk assessment;
- D3 provides the NTC with the opportunity to use the new capability in an operational environment and to provide feedback for future (D4/D5) deployments;
- D3 delivers the ability to perform automated risk assessment for shipment entities in all four modes using Commodity based risk indicators;
- D3 will help shape operational processes associated with using a business rules engine to create, modify and/or turn off commercial risk rules based on performance or emerging threat categories; and
- Introduce the new commercial targeting system (Phoenix) for searching/viewing risk results.



Deployment 4

"End-State Risk Assessment"

Scope

- Complete Automated Risk Assessment (all risk rules are executing and viewable)
- Implementation of initial eManifest new notices for Trade Chain Partners (TCPs)
- Implementation of the Single Window trade document (Integrated Import Declaration) as a release option
- Resolved identities of TCPs using Master Data Management
- Implementation of a risk rules simulation environment

Business Outcomes

- Capability for the NTC to view targets and all risk results (Real Time) in all modes
- Capability to assess the operational impact of implementing new risk rules (using simulation)
- The new notices provide desirable functionality to help improve communication between CBSA and its clients as well as business-to-business communication.
- Validation of the Risk Assessment Model (identification of low and high risk entities)
- Validation that the planned targeting work force can handle the volume

Target Production Date: December 2015



Deployment 5

“Integrated Decision Model”

Scope

- Integrated decisions and referrals (Risk Assessment, Passage and Single Window Initiative)
- Capture of examination results by front line operations
- End-state notices via Electronic Data Interchange and eManifest Portal
- Introduction of Advance Trade Data (ATD) from Importers
- Implementation of end state eManifest trade document submission

Business Outcomes

- Complete integration of risk assessment and passage decisions between NTC and field operations Border Services Officers (BSOs)
- Enhance Program integrity through “closing the loop” on examination results
- Advance Trade Data (ATD) in all modes supports Targeting Program – provides clarity on what commodities are being imported by whom
- Fully integrated commercial processing system and application, includes SWI
- New Documents and Notices available to external clients
- The eManifest system becomes the new system of record
- Full Benefits Realized for TCPs (Manifest Forward, Streamlined Border Processing)

Target Production Date: December 2016



Deployment 6

« *Performance Reporting* »

- 36 Reports
 - Split in 2 Releases
 - D6A – aligns with D4B (4 Reports) – implementation post-D4B
 - D6B – aligns with D5B (32 Reports) – implementation post-D5
- Audit – DSO Audit capabilities for COGNOS reports
- COGNOS Workspace upgrades
- Required hardware uplift to COGNOS environments



Next Steps

- Continue with project transition and support of Deployment 3.
 - Evaluate/tune the commodity risk rules using live production data;
 - Conduit for regular D3 feedback that will guide future developments; and
 - Manage the D3 roll-out (training/support).
- Continue development and testing of remaining project deployments.



Canada Border
Services Agency

Agence des services
frontaliers du Canada



eManifest Senior Project Advisory Committee

Project Update

December 23, 2015
Commercial Projects Directorate
eManifest Division



PROTECTION • SERVICE • INTEGRITY

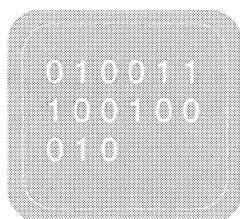
Canada



Overview

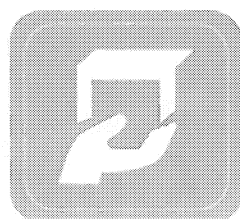
- eManifest modernizes and enhances commercial processes and screening of Canada-bound goods by improving the CBSA's ability to detect shipments that pose a high or unknown risk, while facilitating the movement of low-risk shipments across the border prior to arrival.

Data
Acquisition



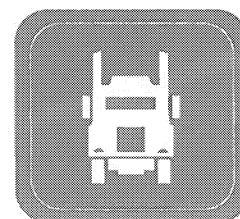
Mandating the acquisition of electronic pre-arrival data

Risk
Assessment



Automating the risk assessment of all data in advance of arrival at the border

Integrated
Decision Model
(Passage)



Complete integration of risk assessment between the NTC and Field Operations BSOs

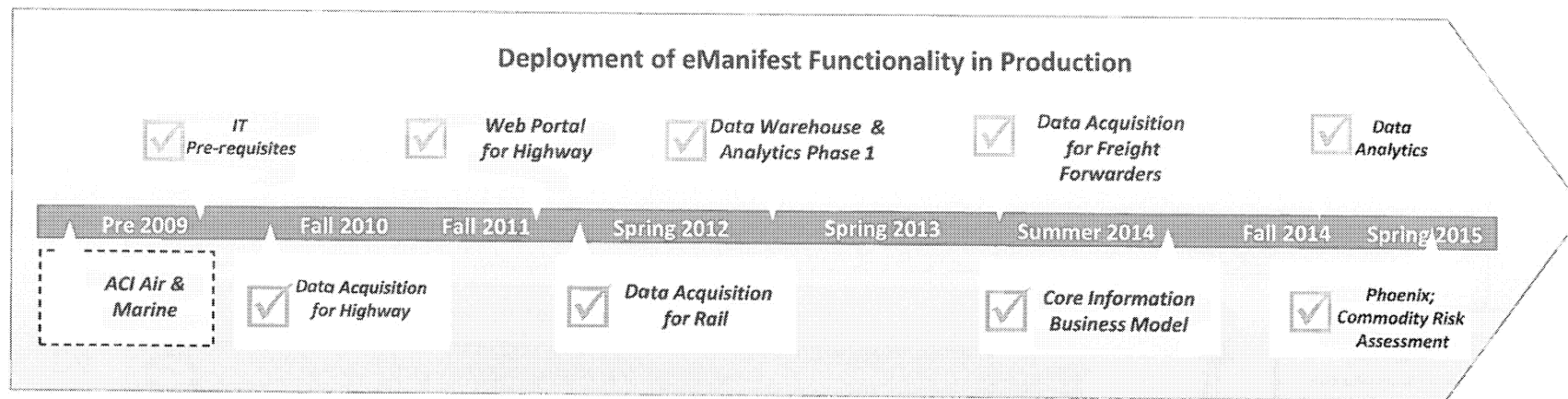
Business
Intelligence



Introducing integrated Business Intelligence systems



eManifest Accomplishments to Date



Systems Deployed:

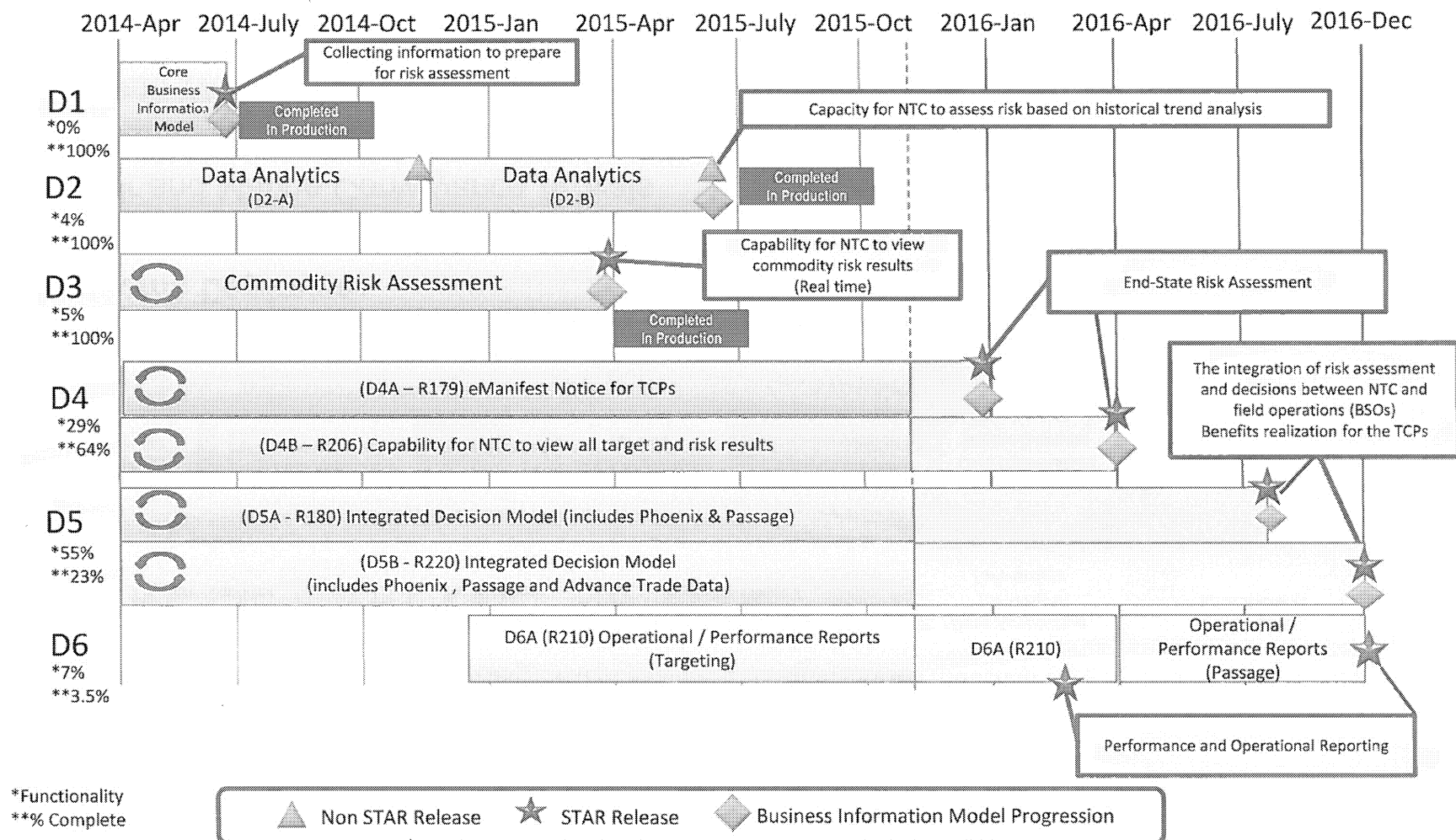
- ✓ eManifest Portal
- ✓ Air and Marine Conveyance Arrivals
- ✓ Manifest Forward
- ✓ Data Warehouse
- ✓ Core Information Business Model
- ✓ Data Analytics
- ✓ Phoenix

Reporting:

- ✓ Highway Reporting
- ✓ Rail Reporting
- ✓ Freight Forwarder Reporting



Schedule





Deployment 2

- The business case for D2 has been achieved with the successful completion of two releases:
 - D2A: The project implemented a subset of the Commercial Mining Mart on the new EDW Appliance with supporting data analytics to demonstrate the business value of moving to a 24 hour refresh rate. Production Date: October 22, 2014
 - D2B: The project augmented the 24 hour refresh of the D2A data sources with Business Information Model (BIM) and Commodity Risk Results data sources. Production Date: June 29, 2015



Deployment 4A – Notices (January 2016)

Winter 2016, the CBSA will introduce new and enhanced notification systems to increase automation of pre and post-arrival notices to clients on commercial movements.

- A subset of new eManifest notices, for EDI clients, will advise on the completeness of advance data submitted to the CBSA and on the arrival and release statuses of shipments.
- The new eManifest notices will be based on the overall shipment status.
 - Current notices are based on individual documents submitted by clients; Release Notification System (RNS) messages are based on the status of the release only.
 - The new eManifest notices will be based on the overall shipment status and notices will be transmitted against individual documents within a shipment whenever the shipment status changes.
- Adoption of the new subset of eManifest notices will be voluntary to provide EDI clients the opportunity to transition to the end-state eManifest notices.



eManifest Notices

Notice	Importer / Broker	Carrier / Freight Forwarder	Warehouse Operator
Completeness Notices			
• Matched	✓	✓	
• Not Matched	✓	✓	
• Cargo Complete		✓	
• Document Package Complete		✓	
Disposition Notices			
• Arrival Notices			
▪ Reported		✓	✓
▪ Arrived		✓	✓
• Status Notices			
▪ Deconsolidation		✓	✓
▪ Document Not on File		✓	
▪ Authorized to Deliver	✓	✓	✓
▪ Released	✓	✓	✓
▪ Held (Basic)	✓	✓	✓



eManifest Benefits

For the Government of Canada

Category	Benefit Description
Security	<ul style="list-style-type: none"> Entity Model – Pre-arrival trade data from multiple sources is compiled into “entities” that provide a complete view of the shipment. Risk assessment happens at the entity level rather than on individual trade documents. Automated Risk Assessment – Commercial entities, across all modes, are risk assessed prior to arrival. High and unknown risk entities are flagged to the targeting officers. Low risk shipments directed to move inland or released by the system. Provides the Agency with the ability to respond to threats in a more timely manner – hours versus weeks. Integrated Targeting Model – Risk assessment for admissibility and release decisions in all four modes is done by targeting officers at the NTC. CBSA is offered better consistency, as all modes are aligned. Business Intelligence – Risk assessment results and examinations are used to “close the loop”, revise risk assessment rules and continually improve the risk assessment process. Electronic data will inform other programs to enhance their risk assessment.
Service	<ul style="list-style-type: none"> Integrated Targeting Model – Risk assessment for admissibility and release decisions in all four modes is done by targeting officers at the NTC. CBSA is offered better consistency, as all modes are aligned. Business Intelligence – Risk assessment results and examinations are used to “close the loop”, revise risk assessment rules and continually improve the risk assessment process. Electronic data will inform other programs to enhance their risk assessment.
Savings	<ul style="list-style-type: none"> Integrated Targeting Model – Risk assessment for admissibility and release decisions in all four modes is done by targeting officers at the NTC. CBSA is offered better consistency, as all modes are aligned. Business Intelligence – Risk assessment results and examinations are used to “close the loop”, revise risk assessment rules and continually improve the risk assessment process. Electronic data will inform other programs to enhance their risk assessment.



eManifest Benefits (con't)

For trade and Canadians

Category	Benefit Description
Service	<ul style="list-style-type: none"> • Electronic Data Interchange – Trade Chain Partners electronically transmit advanced commercial information, which can be used in communication with other trade chain partners. • Predictability – Risk assessment prior to arrival provides predictability for trade. • Consistency – National integrated targeting provides trade with consistency, as all modes in the Commercial process are aligned. • Facilitation – focus on high risk shipments for targeting and inspection facilitates the legitimate flow of low-risk trade. • Ability to cleanse data reduces costly requests for information (RFI) to Trade.



ANNEX

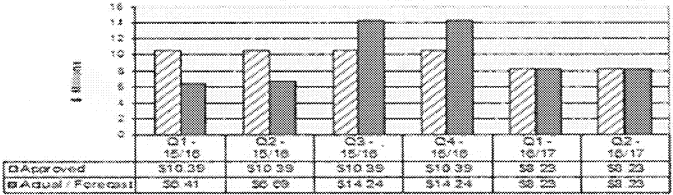


Cost

Prior to Rebaselining: \$295.1M (including EBP fully loaded)		
Deployment (Sub-Deployments)	Budget	Completed on Time and on Budget
Core Business Information Model *	\$10.3M	✓
Data Analytics (A)	\$1.1M	✓
Data Analytics (B)	\$3.4M	✓
Commodity Risk Assessment	\$21.8M	✓
End State Risk Assessment	\$34.9M	Ongoing
Integrated Decision Model	\$42.4M	Ongoing
Operational / Performance Reports	\$16.3M	Ongoing
Total for All Deployments	\$119.9M	



Dashboard

Executive Project Dashboard																																																																						
Organization: Canada Border Services Agency Project: eManifest			Project Phase: Execution Report as of: 2015-Oct-31			Project Complexity and Risk Rating: Level 4 - Transformational Next Project Gate: 6 - Construction Complete and Deployment Readiness			Project Health	Y																																																												
Executive Summary Current Period: Deployment 4A introduces a Notification system that clients will use to track their importations. Software testing was extended to meet quality management objectives. Revised target date for software testing completion is December 15, 2015. Forecast: Formalize the Deployment 4A revised production date through governance. Overall Status: The project overall health is yellow. Remaining risks and issues are being mitigated.			Project Sponsor: Maurice Chenier, Martin Bolduc			Project Cost: Approved Budget : \$415.1 million Actual/Forecast Cost : \$415.1 million			Cost	G																																																												
Business Outcomes <ul style="list-style-type: none">Enhance CBSA capacity to provide a pre-arrival risk determination prior to the arrival of goods in CanadaProvide CBSA with the ability to conduct more effective enforcement activitiesEnable CBSA, PGAs & TCPs to evolve toward an automated eCommerce importation process in line with international standards.						<table><thead><tr><th>YYYYYY</th><th>Prior</th><th>2012-13</th><th>2013-14</th><th>2014-15</th><th>2015-16</th><th>2016-17</th><th>Total</th></tr></thead><tbody><tr><td>Approved</td><td>\$378.0</td><td>\$37.1</td><td>\$0.0</td><td>\$0.0</td><td>\$0.0</td><td>\$0.0</td><td>\$415.1</td></tr><tr><td>Actual/Forecast</td><td>\$228.5</td><td>\$33.5</td><td>\$34.9</td><td>\$33.8</td><td>\$41.6</td><td>\$32.9</td><td>\$415.1</td></tr></tbody></table>			YYYYYY	Prior	2012-13	2013-14	2014-15	2015-16	2016-17	Total	Approved	\$378.0	\$37.1	\$0.0	\$0.0	\$0.0	\$0.0	\$415.1	Actual/Forecast	\$228.5	\$33.5	\$34.9	\$33.8	\$41.6	\$32.9	\$415.1	Schedule	G																																				
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						Project Schedule			Risk	Y																																																												
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						Key Milestones/Deliverables																																																																
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Deployment 2

“Data Analytics”

Scope

- Data Analytics capability to assist intelligence officers / targeting teams in the National Targeting Centre (NTC) in the mining of the existing and historical trade data

Business Outcomes

- Capability for the NTC to assess risk based on historical trend analysis (e.g. anomalies in a companies Business Profile – pattern and trend deviation)
- Identification of ‘candidate’ risk indicators (e.g. use analytics to develop new rules based on vessel routing patterns, container delivery address)
- Modification of existing indicators based on analysis / outcomes and new data feeds

Target Production Date:

- ✓ Deployment 2A: Implemented in Production - October 2014
- ✓ Deployment 2B: June 2015



Deployment 3

“Commodity Risk Assessment”

Scope

- Start of Automated Risk Assessment
- Introduction of the risk results User Interface (UI) that supports the viewing of shipments
- Provide the ability to view and modify High Risk Commodity rules
- Implementation of High Risk Commodity rules to support Automated Risk Assessment of shipments

Business Outcomes

- Capability for the NTC to view High Risk Commodity risk results (Real Time) in all modes;
- Supports the ability to target or interdict high risk shipments using legacy commercial systems
- Ability for the Program to assess the performance of High Risk Commodity rules in new system vs. legacy system
- Validating and improving the Automated Risk Assessment results

Target Production Date:

✓ March 2015



Deployment 4

“End-State Risk Assessment”

Scope

- Complete Automated Risk Assessment (all risk rules are executing and viewable)
- Implementation of initial eManifest new notices for Trade Chain Partners (TCPs)
- Implementation of the Single Window trade document (Integrated Import Declaration) as a release option
- Resolved identities of TCPs using Master Data Management
- Implementation of a risk rules simulation environment

Business Outcomes

- Capability for the NTC to view targets and all risk results (Real Time) in all modes
- Capability to assess the operational impact of implementing new risk rules (using simulation)
- The new notices provide desirable functionality to help improve communication between CBSA and its clients as well as business-to-business communication.
- Validation of the Risk Assessment Model (identification of low and high risk entities)
- Validation that the planned targeting work force can handle the volume

D4A Target Production Date: January 30-31, 2016

D4B Target Production Date: April 2-3, 2016



Deployment 5

“Integrated Decision Model”

Scope

- Integrated decisions and referrals (Risk Assessment, Passage and Single Window Initiative)
- Capture of examination results by front line operations
- End-state notices via Electronic Data Interchange and eManifest Portal
- Introduction of Advance Trade Data (ATD) from Importers
- Implementation of end state eManifest trade document submission

Business Outcomes

- Complete integration of risk assessment and passage decisions between NTC and field operations Border Services Officers (BSOs)
- Enhance Program integrity through “closing the loop” on examination results
- Advance Trade Data (ATD) in all modes supports Targeting Program – provides clarity on what commodities are being imported by whom
- Fully integrated commercial processing system and application, includes SWI
- New Documents and Notices available to external clients
- The eManifest system becomes the new system of record
- Full Benefits Realized for TCPs (Manifest Forward, Streamlined Border Processing)

D5A Target Production Date: August 2016

D5B Target Production Date: December 2016



Deployment 6

“Operational and Performance Reports”

Scope

- Risk Assessment: Operational and Management Reports
- Passage: Operational and Management Reports

Business Outcomes

- Program Performance and Operational Reporting
- Increased Decision Support for Programs

Target Production Date:

- Deployment 6A (aligns with D4B production): April 2016
- Deployment 6B (aligns with D5B Production): December 2016



Canada Border
Services Agency

Agence des services
frontaliers du Canada



eManifest Project Update for Commercial Programs Directorate

Commercial Projects Directorate
May, 2015



PROTECTION • SERVICE • INTEGRITY

Canada

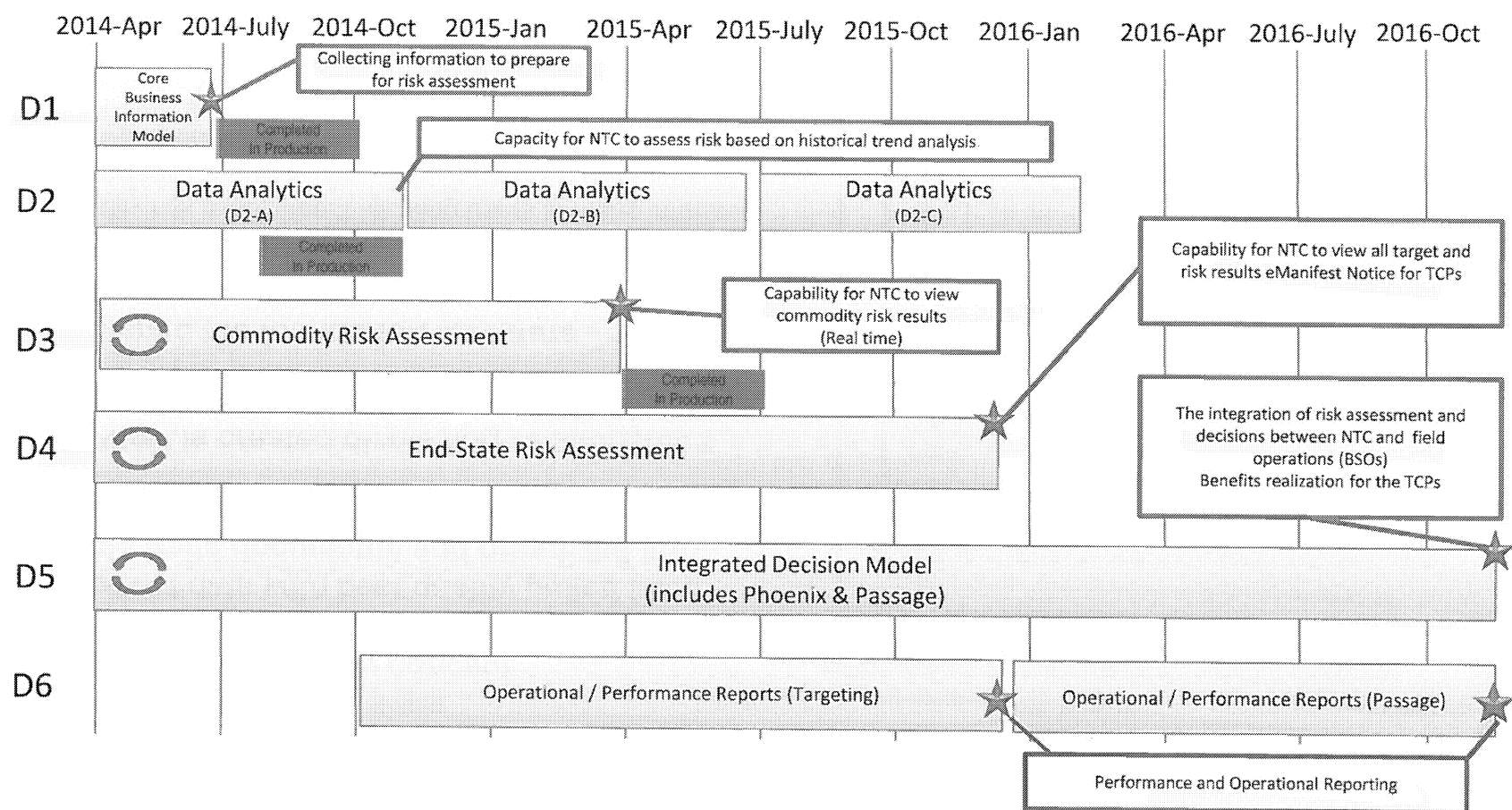


Agenda

- eManifest Deployment Overview
 - Deployment 1 – Business Information Model
 - Deployment 2 – Data Analytics
 - Deployment 3 – Commodity Risk Indicators
 - Deployment 4 – End-State Risk Assessment
 - Deployment 5 – Integrated Decision Model
 - Deployment 6 – Operational and Performance Reports



eManifest Delivery Approach





Deployment 1: Entity Creation & Relationship

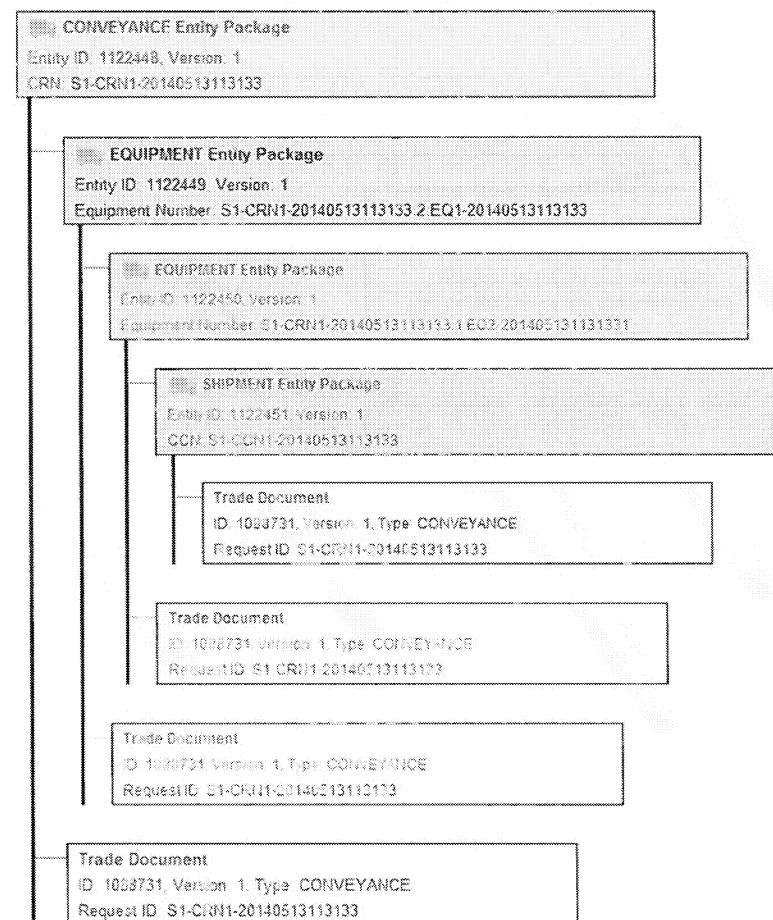
D1 introduced the entity concept.

Clusters of data with best quality pulled from multiple trade documents and organized into entities – conveyance, equipment and shipment.

A trip view is created displaying relationships between conveyance, equipment and shipments.

Established the foundation for future deployments:

- Packages relevant data together to ensure timely and quality risk assessment allowing users to make informed decisions.
- Facilitating review of shipments by risk assessing and applying decisions at the entity level as opposed to individual documents.
- Risk results, decisions, referrals, and exam results are all associated to the entity enhancing the capability to perform analytics to improve future risk determination (i.e. “closing the loop”).





Deployment 2: Data Analytics

Directed Queries

Identification of shipments of interests based on Intelligence received from the National Targeting Centre (NTC).

Business Profiles

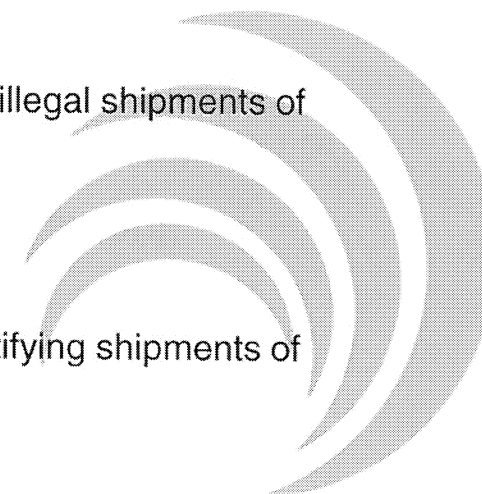
Analytical tools that seek business pattern deviations based on known characteristics of a companies importing history.

Precursor Chemicals

Analytical tool to assist targeting operations in identifying illegal shipments of precursor chemicals.

Rail Targeting

Assesses pre-arrival commercial data and assists in identifying shipments of interest in the rail environment.





Deployment 3

"Commodity Risk Assessment"

- Deployment 3 is the foundation for commercial risk assessment;
- D3 provides the NTC with the opportunity to use the new capability in an operational environment and to provide feedback for future (D4/D5) deployments;
- D3 delivers the ability to perform automated risk assessment for shipment entities in all four modes using Commodity based risk indicators;
- D3 will help shape operational processes associated with using a business rules engine to create, modify and/or turn off commercial risk rules based on performance or emerging threat categories; and
- Introduce the new commercial targeting system (Phoenix) for searching/viewing risk results.



Deployment 4 (D4A-R179 & D4B-TBD)

"End-State Risk Assessment"

- Deployment 4 is being delivered in two releases.
- The below tables represent what components are being delivered in D4A and D4B.

D4A – Data Acquisition

Notices

Data Transition

IID Consumption

Identity Resolution

Risk Assessment

Audit

D4B – Risk Assessment

Data Acquisition

Data Transition

Identity Resolution

Risk Assessment

Audit

ODM re-platform



Deployment 5 (R180)

"Integrated Decision Model"

- D5 will introduce the new business information model which will change how commercial information is stored and decisions are made
- New Commercial border processing application (Passage) that will be used by BSOs to process commercial shipments as they enter Canada
- Full integration of Passage and new risk assessment systems
- End-state notices via Electronic Data Interchange and eManifest Portal
- Introduction of Advance Trade Data (ATD) from Importers
- Implementation of end state eManifest trade document submission
- Enhanced program integrity through "closing the loop" on examination results
- eManifest systems becomes the new systems of record
- Full benefits realized for TCPs (Manifest Forward, Streamlined Border Processing) and internal stakeholders (streamlined examination results, better application usability, etc.)



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eManifest Deployment 2

Presentation to Project Portfolio Advisory Committee (PPAC)

September 03, 2015

eManifest Division (Mike Leahy)



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Objective

- eManifest is seeking approval that:
 - The delivery of Deployment 2 (D2) project objectives have been achieved as per the business case, and
 - Future data analytics enhancements will be covered under maintenance funding.



Background

- The business case, as outlined in the TB Submission, included a deliverable for Advanced Data Analytics for the amalgamation of the advanced analytics platform to include all modes.
- The business case for D2 has been achieved with the successful completion of two releases:
 - D2A: The project implemented a subset of the Commercial Mining Mart on the new EDW Appliance with supporting data analytics to demonstrate the business value of moving to a 24 hour refresh rate. Production Date: October 22, 2014
 - D2B: The project augmented the 24 hour refresh of the D2A data sources with Business Information Model (BIM) and Commodity Risk Results data sources. Production Date: June 29, 2015



Future Maintenance Activities

- Maintenance Release
 - Will augment the refresh of the D2A & D2B data sources with additional Business Information Model, Master Data Management, Risk Results and Target Results data sources.
 - Will be implemented as part of Service Management under Commercial Projects Directorate (CPD) and adhere to SLMF.



Next Steps

- Communicate D2 close-out decision to all stakeholders and delivery teams.
- Future enhancements will be aligned with maintenance funding.



Senior Project Advisory Committee (SPAC)

July 16, 2014

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Background

- In February the CBSA began to perform a review of the eManifest project and a root cause analysis began to identify risks, mitigation strategies and develop a Delivery Framework for the to recover the project with full business benefits.
- In March three Options for moving forward were identified and an Option Analysis was undertaken. The following three Options for moving forward were identified:

Option 2 – Hybrid Delivery

- This option introduces a new delivery model designed to deliver business benefits early by augmenting the project team competency and capacity with different forms of vendor relationships
- In April the Executive Committee (EC) approved moving forward with Option 2 and the project team proceeded with the development of the detailed planning, risk mitigation and third party endorsement activities.
- In June, the new delivery approach was approved by EC.

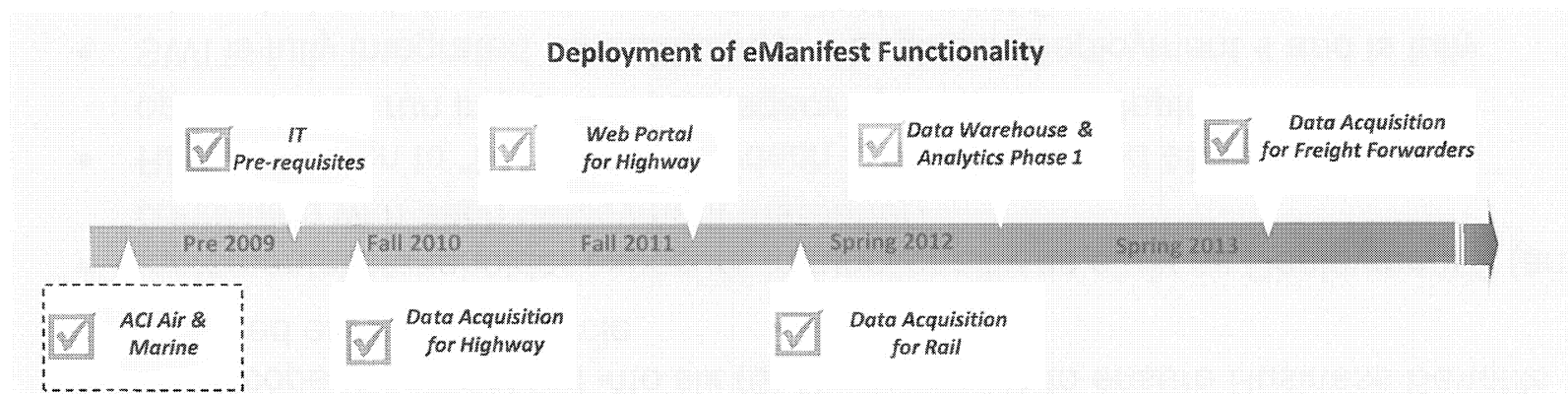


New Delivery Approach

- ✓ The new delivery approach is supported by CBSA resources and is augmented with external support to do parallel work that will generate early, tangible benefits to confirm development milestones are being met and provide support for front-line operations.
- ✓ The revised plan will provide additional time to train CBSA staff and conduct outreach to external stakeholders to ensure a successful implementation.
- ✓ The plan addresses external clients' requests for more time to make changes to their internal business processes and systems in order to adapt to the new requirements.
- ✓ Delivery Scope is segmented into six (6) Deployments to ensure Business Benefits are delivered earlier in the cycle
 - Incremental stakeholder exposure to functionality as early as Deployment 2 (and continuing with each deployment thereafter)
 - Risk mitigation to "Big Bang" approach - newly deployed eManifest system operations to run in parallel with legacy systems until Deployment 5
 - SWI is fully integrated with eManifest – begins in Deployment 4 and is fully integrated and deployed as a part of Deployment 5
 - Crew and electronic re-manifest requirements have been removed from scope and will be delivered as a part of the larger CBSA border modernization program



eManifest Key Accomplishments to Date



Systems Deployed:

- ✓ Highway Cargo and Conveyance Reporting
- ✓ Rail Reporting
- ✓ eManifest Portal
- ✓ Freight Forwarder Reporting
- ✓ Air and Marine Conveyance Arrivals
- ✓ Manifest Forward
- ✓ Data Warehouse

Implementation Highlights:

- ✓ Over 11,000 highway carriers now engaged with eManifest
- ✓ 97% of Top 500 Carriers engaged
- ✓ Regulations progressing
- ✓ Multiple rounds of training for BSOs
- ✓ Regional network in place
- ✓ Established a program alignment structure to resolve outstanding issues
- ✓ Webinars, web content, presentations

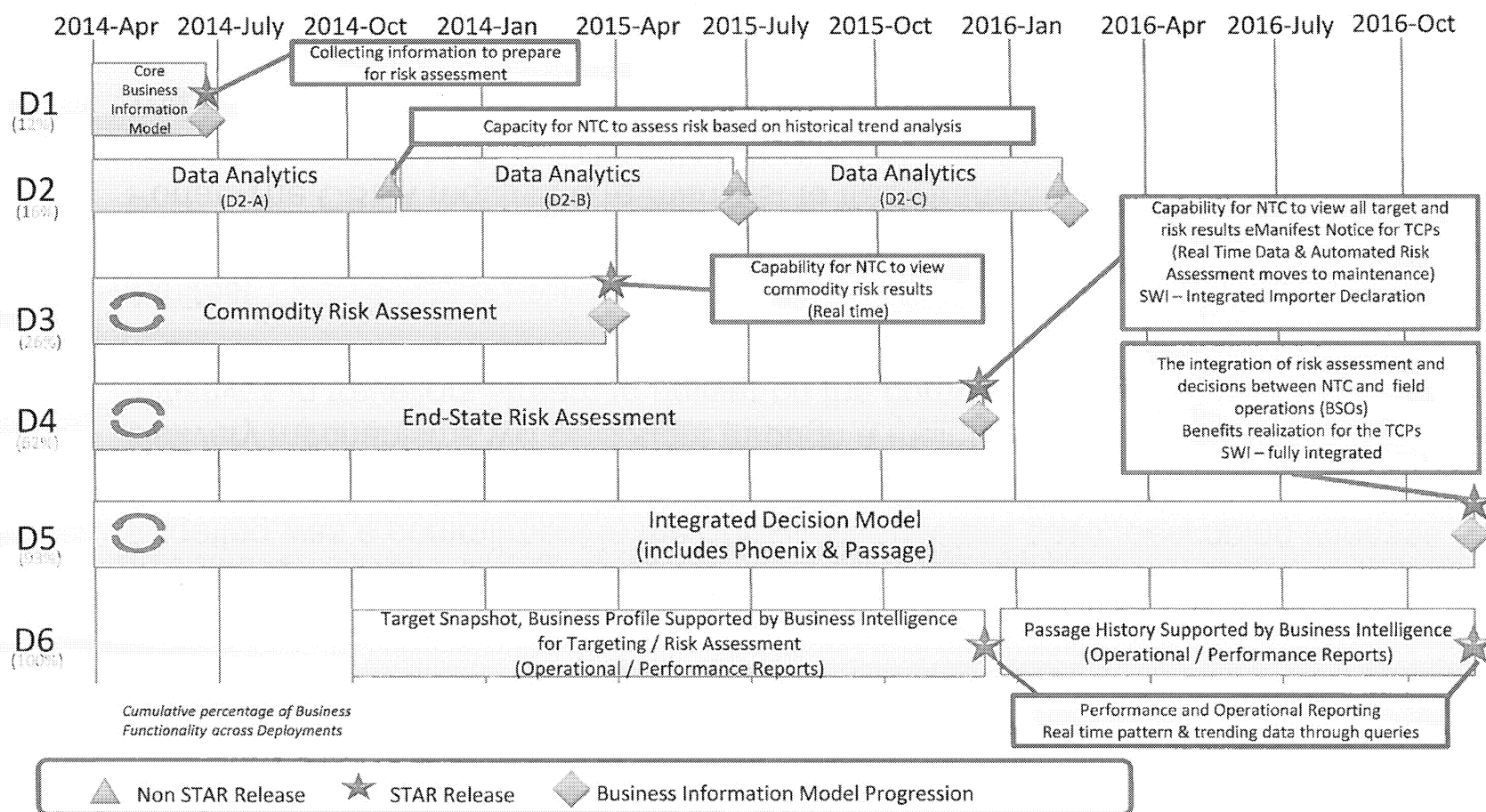


De-scoping impacts

- Crew
 - The ability to collect pre-arrival crew information for risk assessment and targeting was a commitment in the eManifest business case; descoping imposes the continued need for paper based manual review and targeting.
 - Delivery mechanisms will be sought through a maintenance release and/or joint initiatives in travellers stream to deliver on the commitment.
- Re-Manifest
 - Functionality for carriers to submit re-manifests electronically through EDI or the Portal. The CBSA requires a re-manifest to track transfers in liability between carriers or when goods are changing destination / warehouse location.
 - The agency is reviewing the business value of re-manifest in light of agency transformational initiatives; stakeholders support this review as it offers business process efficiencies.
 - Possible opportunity in changing requirement through the Cargo Control and Sufferance Warehouse Modernization Initiative



Delivery Approach Designed to Generate Early Benefits





Deployment 1

“Core Information Business Model”

Scope

- Electronic Data Capture
- Laying the foundation to prepare the trade documents to support risk assessment (building entity relationships)
 - Description of the High Risk Commodity identification supported by Language Ware.
 - Address data preparation supported by Quality Stage–Address Verification Interface (QS-AVI)

Business Outcomes

- Validation that the core business design is sound
 - Validation that the implemented COTS products provide the expected capability (e.g. ability to resolve an address – supports risk rules that look for commercial shipments destined to residential address, determine what type of commodity is being reported on the manifest)
- ✓ Implemented in Production – June 2014



Deployment 2

“Data Analytics”

Scope

- Data Analytics capability to assist intelligence officers / targeting teams in the National Targeting Centre (NTC) in the mining of the existing and historical trade data

Business Outcomes

- Capability for the NTC to assess risk based on historical trend analysis (e.g. anomalies in a companies Business Profile – pattern and trend deviation)
- Identification of ‘candidate’ risk indicators (e.g. use analytics to develop new rules based on vessel routing patterns, container delivery address)
- Modification of existing indicators based on analysis / outcomes and new data feeds
- **Target Production Date:**
 - Deployment 2A: October 2014
 - Deployment 2B: June 2015
 - Deployment 2C: February 2016



Deployment 3

"Commodity Risk Assessment"

Scope

- Start of Automated Risk Assessment
- Introduction of the risk results User Interface (UI) that supports the viewing of shipments
- Provide the ability to view and modify High Risk Commodity rules
- Implementation of High Risk Commodity rules to support Automated Risk Assessment of shipments

Business Outcomes

- Capability for the NTC to view High Risk Commodity risk results (Real Time) in all modes;
- Supports the ability to target or interdict high risk shipments using legacy commercial systems
- Ability for the Program to assess the performance of High Risk Commodity rules in new system vs. legacy system
- Validating and improving the Automated Risk Assessment results
- **Target Production Date:** March 2015



Deployment 4

“End-State Risk Assessment”

Scope

- Complete Automated Risk Assessment (all risk rules are executing and viewable)
- Implementation of initial eManifest new notices for Trade Chain Partners (TCPs)
- Implementation of the Single Window trade document (Integrated Import Declaration) as a release option
- Resolved identities of TCPs using Master Data Management
- Implementation of a risk rules simulation environment

Business Outcomes

- Capability for the NTC to view targets and all risk results (Real Time) in all modes
- Capability to assess the operational impact of implementing new risk rules (using simulation)
- The new notices provide desirable functionality to help improve communication between CBSA and its clients as well as business-to-business communication.
- Validation of the Risk Assessment Model (identification of low and high risk entities)
- Validation that the planned targeting work force can handle the volume

Target Production Date: December 2015



Deployment 5

"Integrated Decision Model"

Scope

- Integrated decisions and referrals (Risk Assessment, Passage and Single Window Initiative)
- Capture of examination results by front line operations
- End-state notices via Electronic Data Interchange and eManifest Portal
- Introduction of Advance Trade Data (ATD) from Importers
- Implementation of end state eManifest trade document submission

Business Outcomes

- Complete integration of risk assessment and passage decisions between NTC and field operations Border Services Officers (BSOs)
 - Enhance Program integrity through "closing the loop" on examination results
 - Advance Trade Data (ATD) in all modes supports Targeting Program – provides clarity on what commodities are being imported by whom
 - Fully integrated commercial processing system and application, includes SWI
 - New Documents and Notices available to external clients
 - The eManifest system becomes the new system of record
 - Full Benefits Realized for TCPs (Manifest Forward, Streamlined Border Processing)
- **Target Production Date:** December 2016

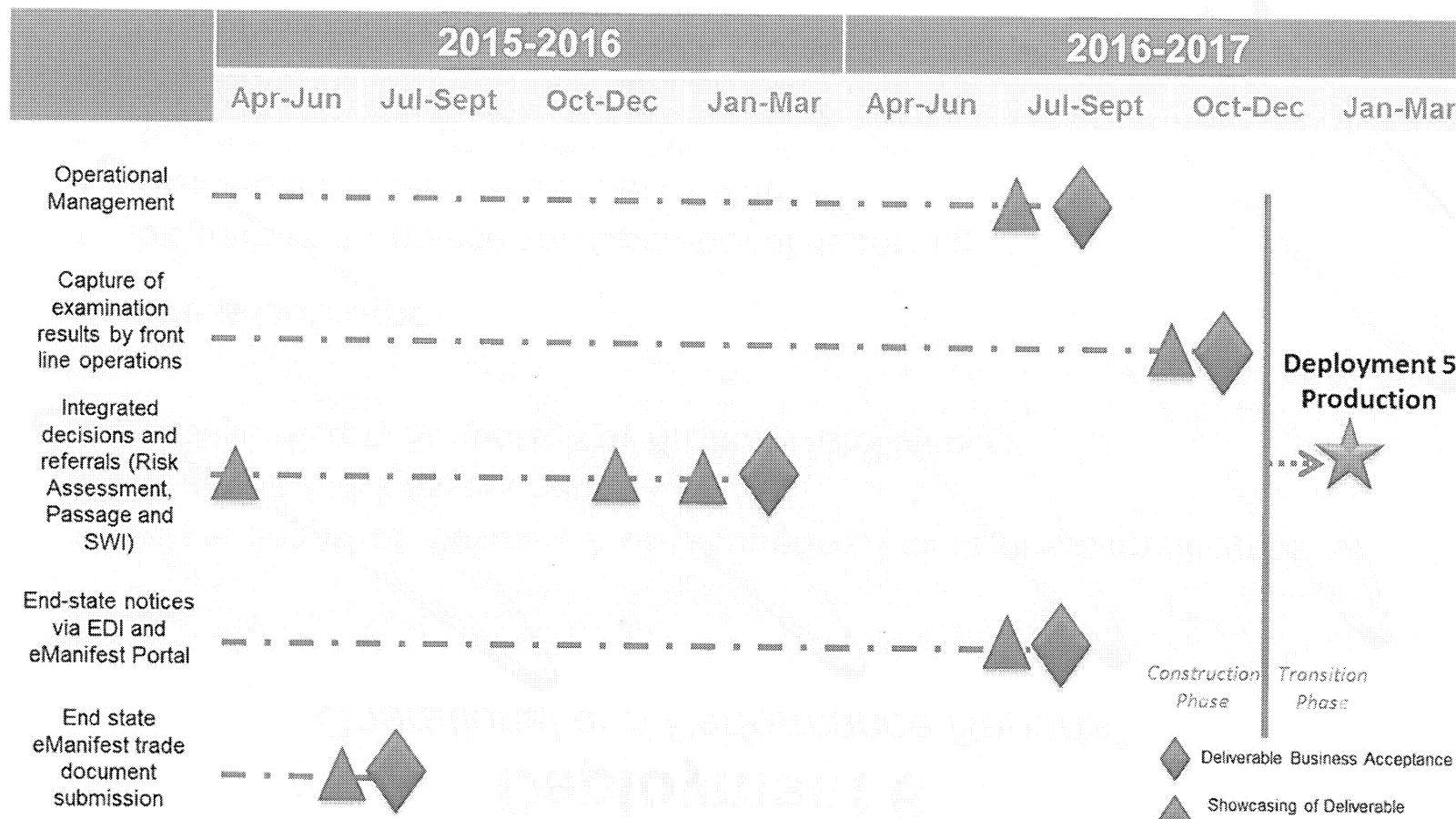


D5 Business Outcome Realization

- D5 rollout is structured around the completion of components such as risk assessment and data acquisition to create efficiencies in delivery of the passage requirements
- D5 is broken down into five deliverables that integrate together to deliver the full benefits realization
- Importer end-state eManifest trade documents will be delivered in D5 to align with the new system and avoid redundant costly work on ACROSS
- As a result, the integrated decision model is dependant on completion of the risk assessment component aligning risk assessment and passage as an integrated system of record



Deployment 5 - Deliverables & Timelines





Deployment 6

"Operational and Performance Reports"

Scope

- Target Snapshot, Business Profile Supported by Business Intelligence for Targeting / Risk Assessment
- Passage History Supported by Business Intelligence

Business Outcomes

- Program Performance and Operational Reporting
- Business Intelligence – Self Serve Model
- Real time pattern & trending data through queries
- **Target Production Date:**
 - Deployment 6A (aligns with D4 production): December 2015
 - Deployment 6B (aligns with D5 Production): December 2016



Gartner eManifest Project Assessment Executive Summary

Scope of the Assessment

Gartner has been asked to assess the eManifest recovery plan.
 This limits the analysis and possible recommendations.

Architecture Viability

The Architecture supports the realization of business benefits for eManifest.
 Non-functional requirements and the ability to meet them have yet to be confirmed.

Management of Risk

Past project delivery issues have been identified and risk mitigation actions developed.
 Executing those actions will be challenging.

Compressed delivery timelines

Project success will depend on prioritization of eManifest within the Agency.
 The magnitude of risk and change management is not fully appreciated.

Vendor Management

Procuring and managing complex outcome-based supply arrangements would prove very risky, given CBSA's current level of vendor management maturity.
 Executing new sourcing approaches may not yield the value being sought within eManifest's timelines.



Communications

- External Stakeholders
 - External stakeholders will be advised of the new delivery plan with dates
 - A full communications strategy will be developed once the plan is approved
- Internal Stakeholders
 - Present re-baselined plan to CIOB
 - Briefing to TB
- Minister's Office
 - Provide an update on eManifest status and plan, impacts on BtB commitments, external stakeholders and regulatory package
- PCO
 - Continue to update BtB team of eManifest status and impacts on BtB commitments
- Staff and Unions
 - Communication of the HR Strategy with staff and unions will begin once plan has been approved
- SSC
 - They are on the recovery team but will also be formally briefed on the approved plan

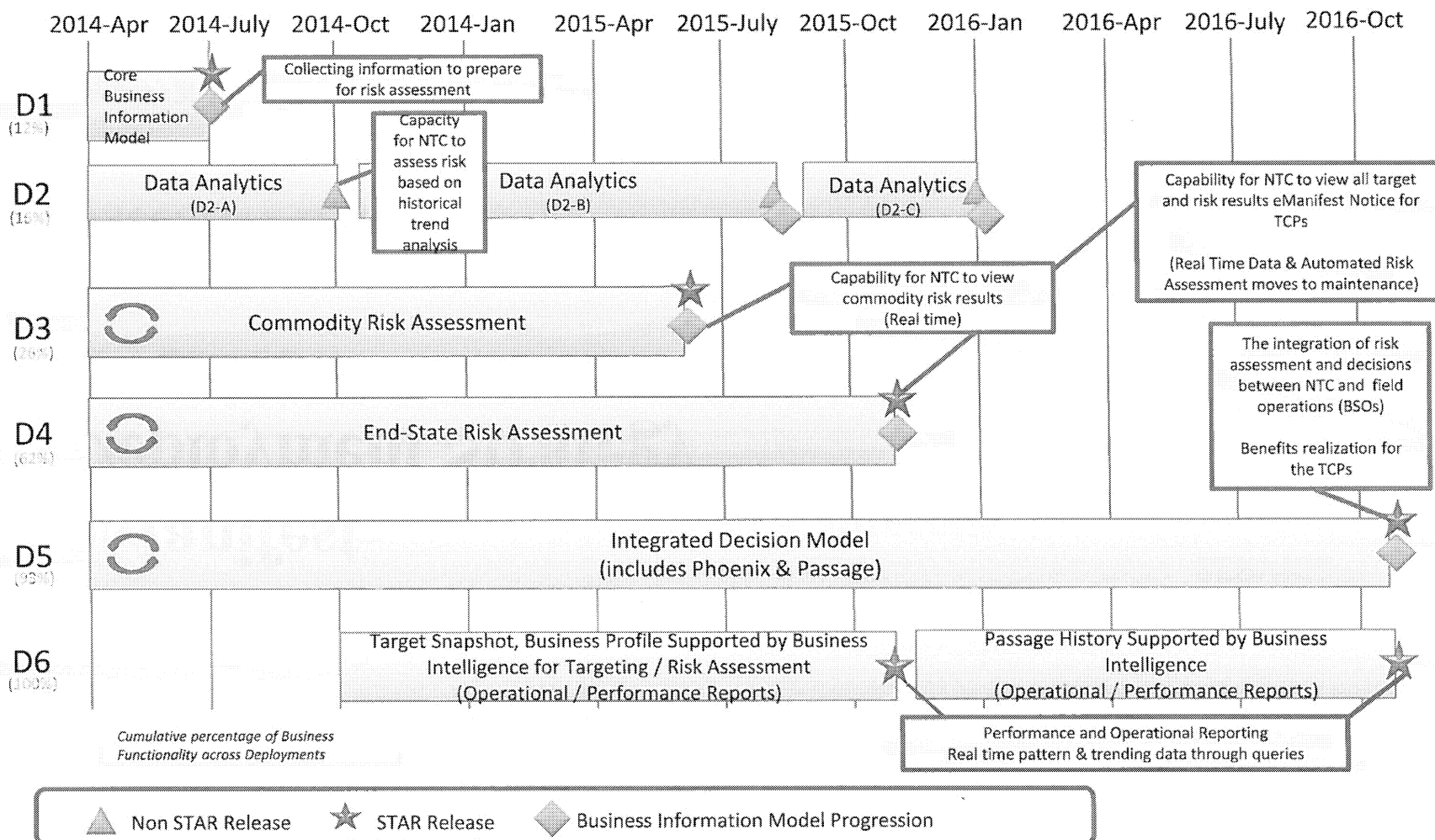


HR Strategy

- Project Development Lifecycle will see shifts in resource allocation and skillsets as the Project moves through Development and into Testing & Implementation
- Business and Systems Analysts will begin transitioning to Maintenance & to new project work through this fiscal and into 2015/2016
- Considering various external delivery assistance options for Business Intelligence (D6) along with the work done to date within the Agency.



eManifest Proposed Deployment Strategy



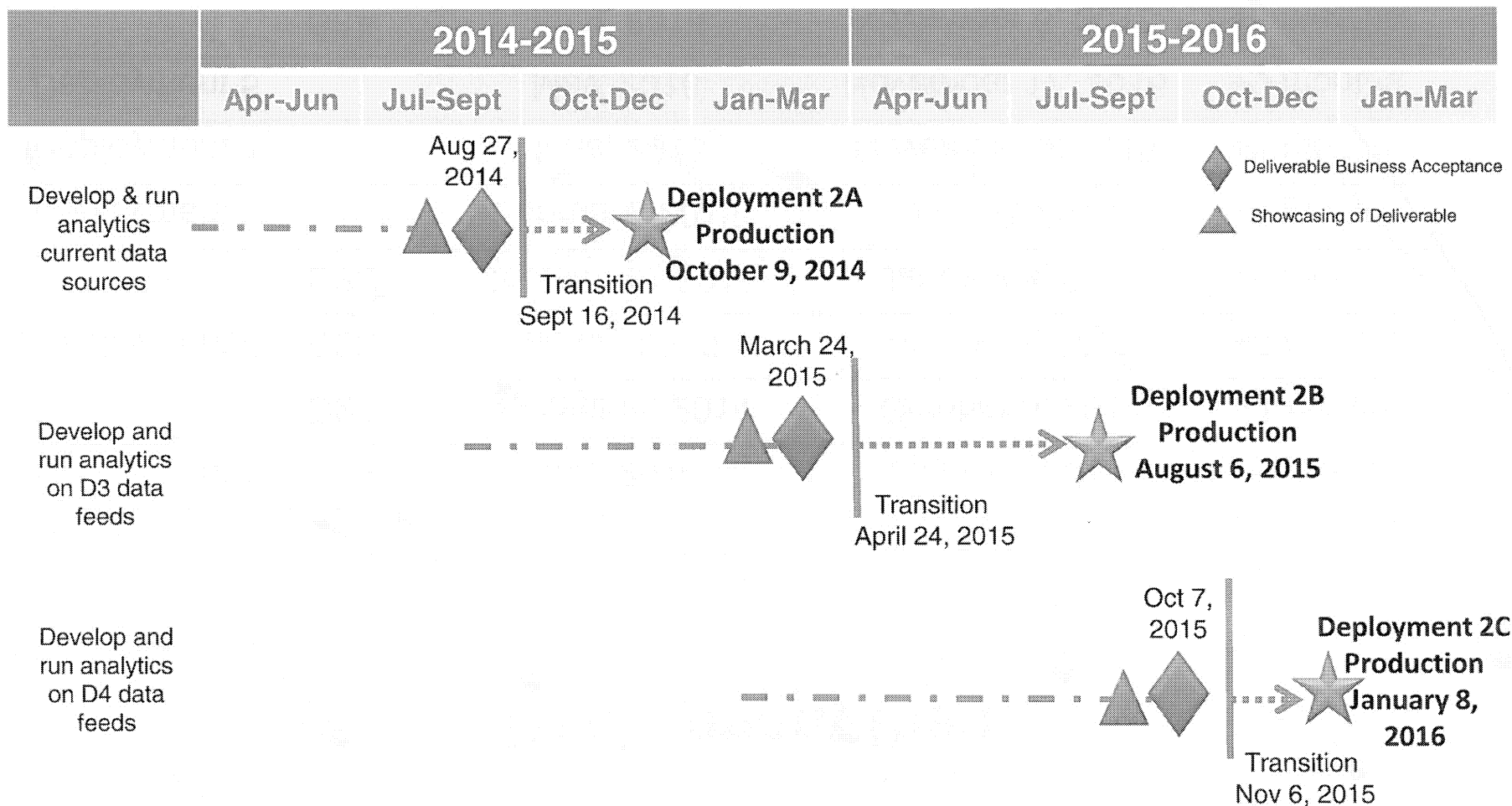


Deployment Plan

Deployment		Draft Date Identified in President Briefing	Rebaseline Date	Variance
Deployment 1		July, 2014	June 14, 2014	-1 month
	D2A	November, 2014	October 9, 2014	-1 month
Deployment 2	D2B	March, 2015	August 6, 2015	+5 months
	D2C	September, 2015	January 8, 2016	+4 months
Deployment 3		February, 2015	June 8, 2015	+4 months
Deployment 4		June, 2015	November 6, 2015	+5 months
Deployment 5		May, 2016	November 17, 2016	+6 months
Deployment 6	D6A	June, 2015	November 6, 2015	+5 months
	D6B	May, 2016	November 17, 2016	+6 months

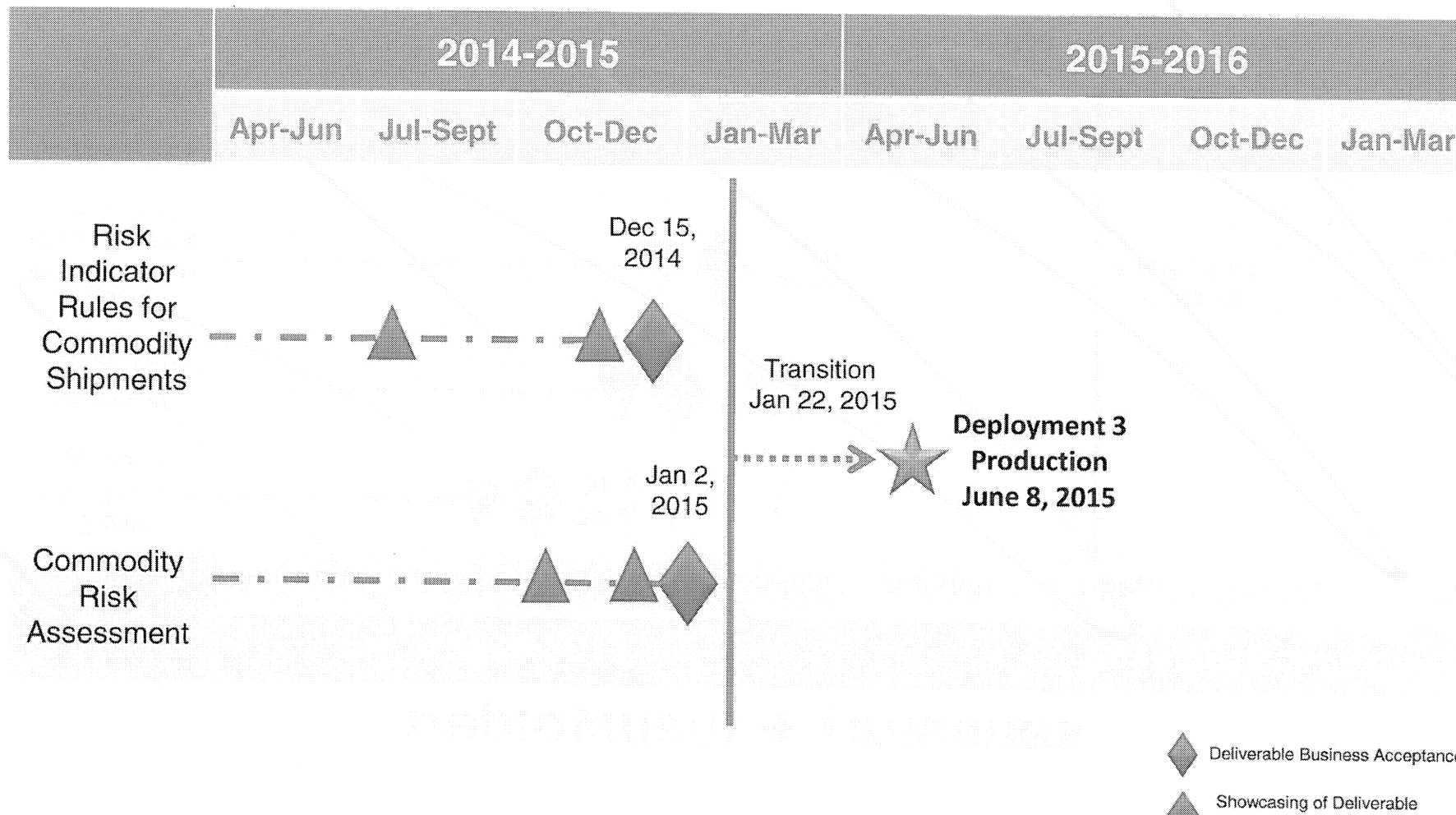


Deployment 2 Timelines



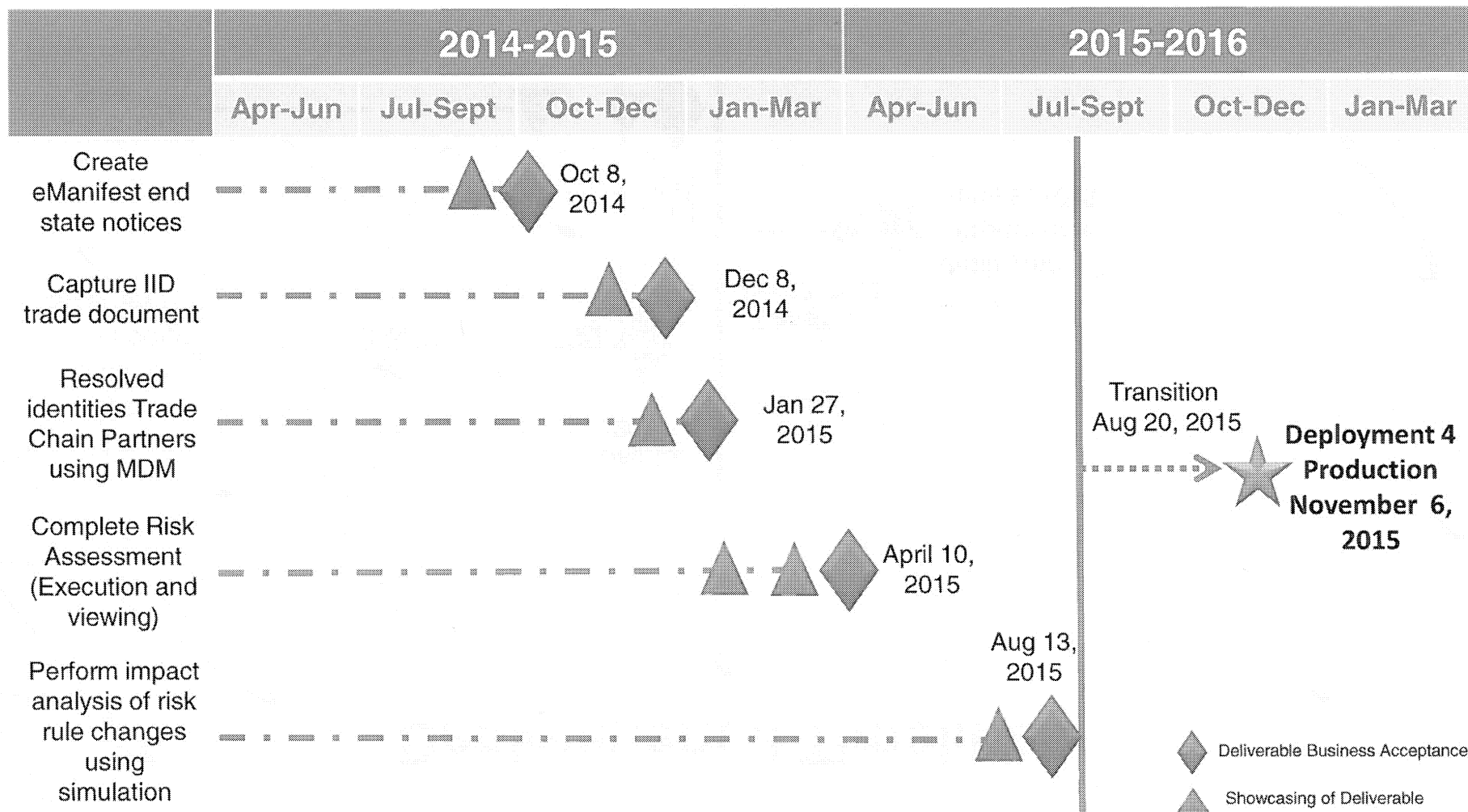


Deployment 3 Timelines



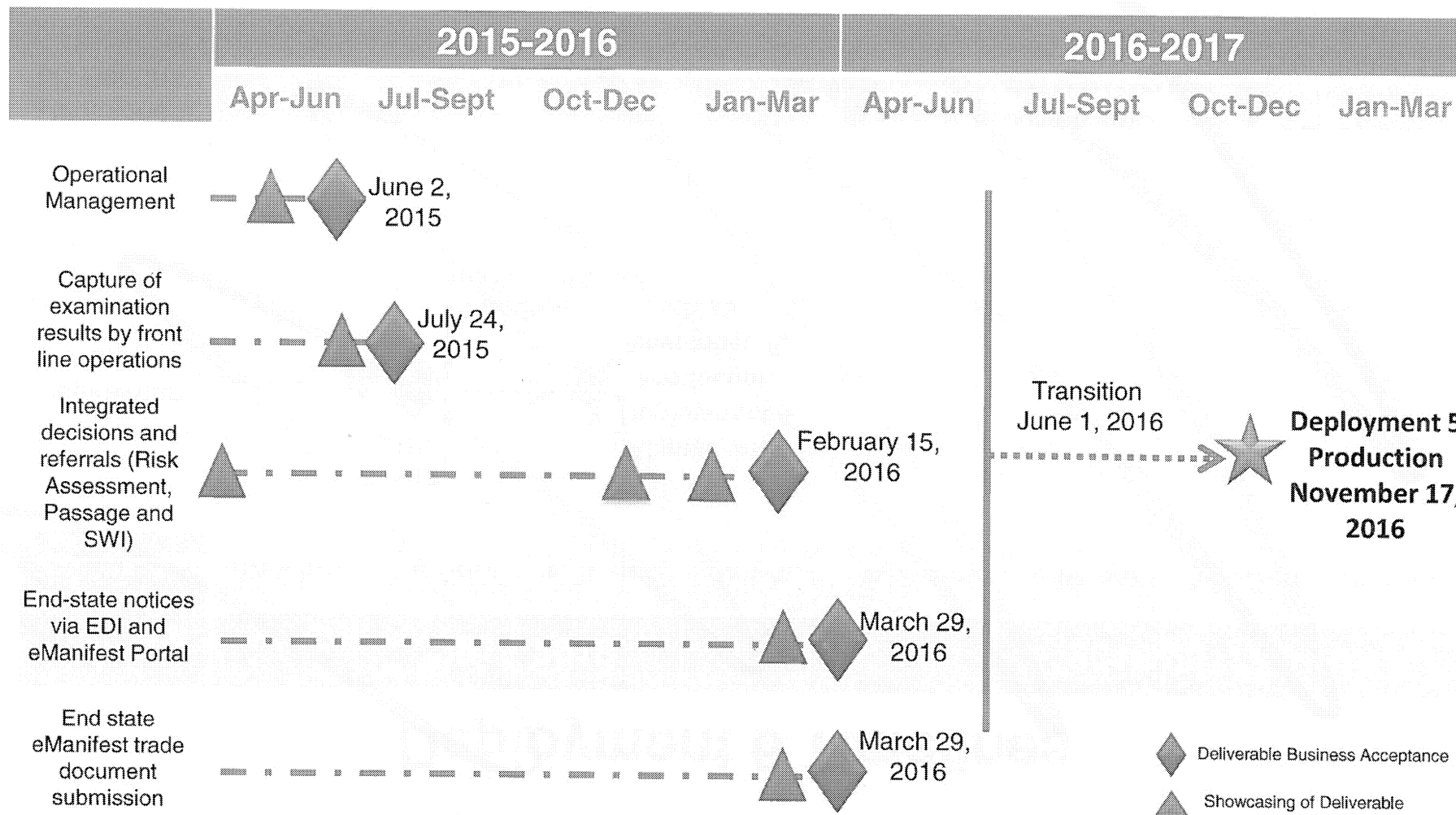


Deployment 4 Timelines





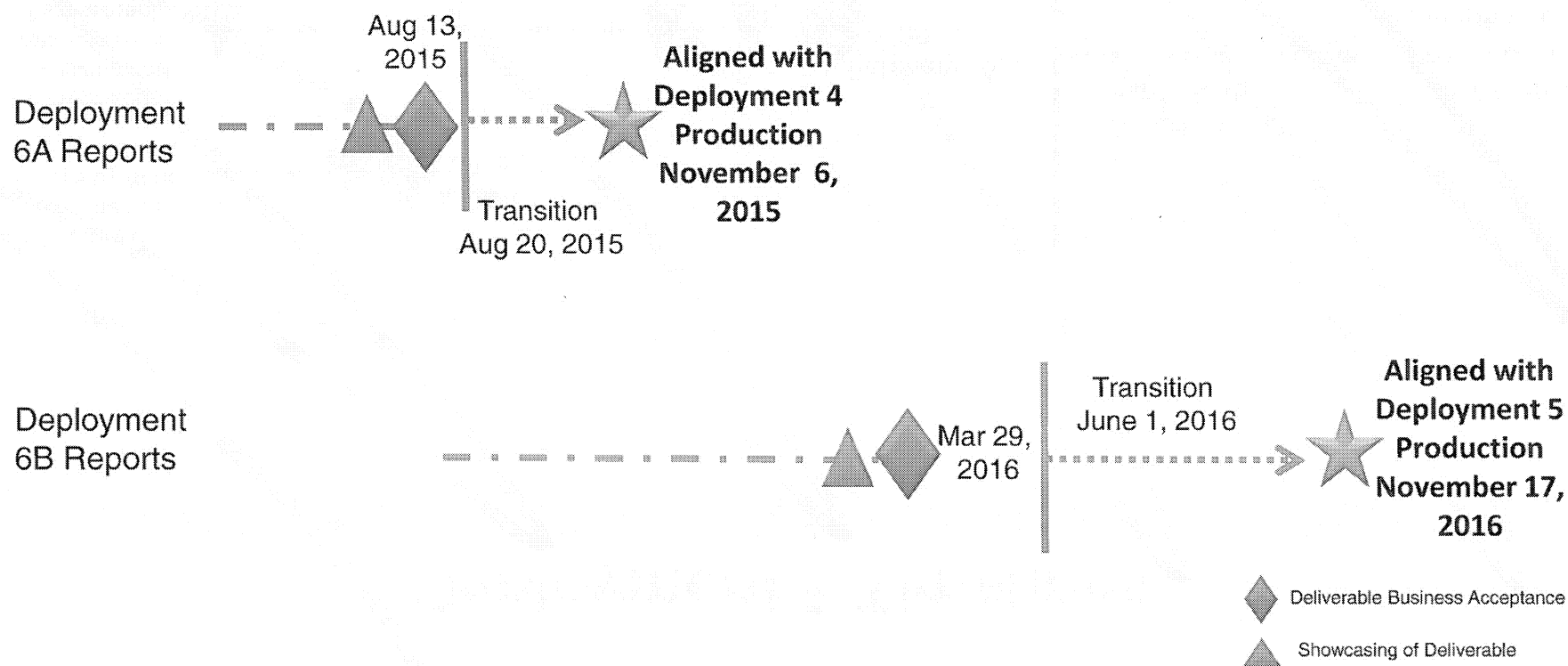
Deployment 5 Timelines





Deployment 6 Timelines

	2015-2016				2016-2017			
	Apr-Jun	Jul-Sept	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec	Jan-Mar





Back-Up Slides



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Deployment 2 Deliverables

Deliverable	Showcase
Develop and execute analytical models based on Program / Operational priorities using current data sources.	<ul style="list-style-type: none"> Run analytical models using Enterprise Data Warehouse appliance current data sources
Demonstrate that analytical models can support Targeting and Intelligence gathering using new data feeds.	<ul style="list-style-type: none"> Run analytical models against current and new data sources from Deployment 3
Develop candidate risk indicators or modify existing indicators based on analysis / outcomes and new data feeds.	<ul style="list-style-type: none"> Run analytical models against current and new data sources from Deployment 4



Deployment 2 Timelines

	Phase	Milestone	Date
Deployment 2A	Pre Transition	Develop & execute analytical models based on Program / Operational priorities using current data sources – Business Acceptance	August 27, 2014
	Transition	Deployment Transition Readiness	September 9, 2014
	Production	Deployment Production	October 9, 2014
Deployment 2B	Pre Transition	Demonstrate that analytical models can support Targeting and Intelligence gathering using new data feeds – Business Acceptance	March 24, 2015
	Transition	Deployment Transition Readiness	April 24, 2015
	Production	Deployment Production	August 6, 2015
Deployment 2C	Pre Transition	Develop candidate risk indicators or modify existing indicators based on analysis / outcomes and new data feeds – Business Acceptance	October 7, 2015
	Transition	Deployment Transition Readiness	November 6, 2015
	Production	Deployment Production	January 8, 2015



Deployment 3 Deliverables

Deliverable	Showcasing of Deliverable
Risk Indicator Rules for Commodity Shipments (Viewing, Authoring and Deploying using ODM)	<ul style="list-style-type: none"> • Cargo Commodity Risk Assessment • Shipment Commodity Risk Assessment
Commodity Risk Assessment	<ul style="list-style-type: none"> • Find the Commodity Risk • Shipment Versions



Deployment 3 Timelines

Phase	Milestone	Date
Pre Transition	Risk Indicator Rules for Commodity Shipments (Viewing, Authoring and Deploying using ODM) – Business Acceptance	December 15, 2014
	Commodity Risk Assessment – Business Acceptance	January 2, 2015
Transition	Deployment Transition Readiness	January 22, 2015
Production	Deployment Production	June 8, 2015



Deployment 4 Deliverables

Deliverable	Showcasing of Deliverable
Create eManifest end state notices (create and view)	<ul style="list-style-type: none"> End State Notices
Capture IID trade document (create and view)	<ul style="list-style-type: none"> Capture IID Trade Document
Resolved identities Trade Chain Partners using MDM	<ul style="list-style-type: none"> Resolution of TCP Identity
Complete Risk Assessment (Execution and viewing)	<ul style="list-style-type: none"> Comprehensive Risk Rule Set Target Maintenance
Perform impact analysis of risk rule changes using simulation	<ul style="list-style-type: none"> Impact of Rule Change (Simulation)



Deployment 4 Timelines

Phase	Milestone	Date
Pre Transition	Create eManifest end state notices (create and view) – Business Acceptance	October 8, 2014
	Capture IID trade document (create and view) – Business Acceptance	December 8, 2014
	Resolved identities Trade Chain Partners using MDM – Business Acceptance	January 27, 2015
	Complete Risk Assessment (Execution and viewing) – Business Acceptance	April 10, 2015
	Perform impact analysis of risk rule changes using simulation – Business Acceptance	August 13, 2015
Transition	Deployment Transition	August 20, 2015
Production	Deployment Production	November 6, 2015



Deployment 5 Deliverables

Deliverable	Showcasing of Deliverable
Operational Management	<ul style="list-style-type: none"> • Risk and Passage Superintendent
Capture of examination results by front line operations	<ul style="list-style-type: none"> • Integrated Front Counter and Secondary Decision
Integrated decisions and referrals (Risk Assessment, Passage and SWI)	<ul style="list-style-type: none"> • Integrated PIL Decision • Single-Window Integration • Transition from ACROSS/TITAN to eManifest
End-state notices via EDI and eManifest Portal	<ul style="list-style-type: none"> • External Client Communication
End state eManifest trade document submission	<ul style="list-style-type: none"> • External Client Communication



Deployment 5 Timelines

Phase	Milestone	Date
Pre Transition	Operational Management – Business Acceptance	June 2, 2015
	Capture of examination results by front line operations – Business Acceptance	July 24, 2015
	Integrated decisions and referrals (Risk Assessment, Passage and SWI) – Business Acceptance	February 15, 2016
	End-state notices via EDI and eManifest Portal – Business Acceptance	March 29, 2016
	End state eManifest trade document submission – Business Acceptance	March 29, 2016
Transition	Deployment Transition Readiness	June 1, 2016
Production	Deployment Production	November 17, 2016



Deployment 6 Deliverables

Deployment	Deliverable	Showcasing of Deliverable
Deployment 6A Reports (aligns with D4 Production Release)	Risk Assessment Reports	<ul style="list-style-type: none"> Integrated Operational Business Intelligence Target Snapshot
	Operational Business Intelligence Reports to support Phoenix and Target Maintenance	
Deployment 6B Reports (aligns with D5 Production Release)	Passage Reports	<ul style="list-style-type: none"> Passage Summary Report
	Operational Business Intelligence to support Passage	



Deployment 6 Timelines

Phase	Milestone	Date
Pre Transition	Risk Assessment Reports – Business Acceptance	August 13, 2015
	Operational Business Intelligence Reports to support Phoenix and Target Maintenance – Business Acceptance	August 13, 2015
Transition	Deployment Transition Readiness	August 20, 2015
Production	Deployment Production (<i>aligns with D4 Production</i>)	November 6, 2015
Pre Transition	Passage Reports – Business Acceptance	March 29, 2016
	Operational Business Intelligence to support Passage – Business Acceptance	March 29, 2016
Transition	Deployment Transition Readiness	June 1, 2016
Production	Deployment Production (<i>aligns with D5 Production</i>)	November 17, 2016



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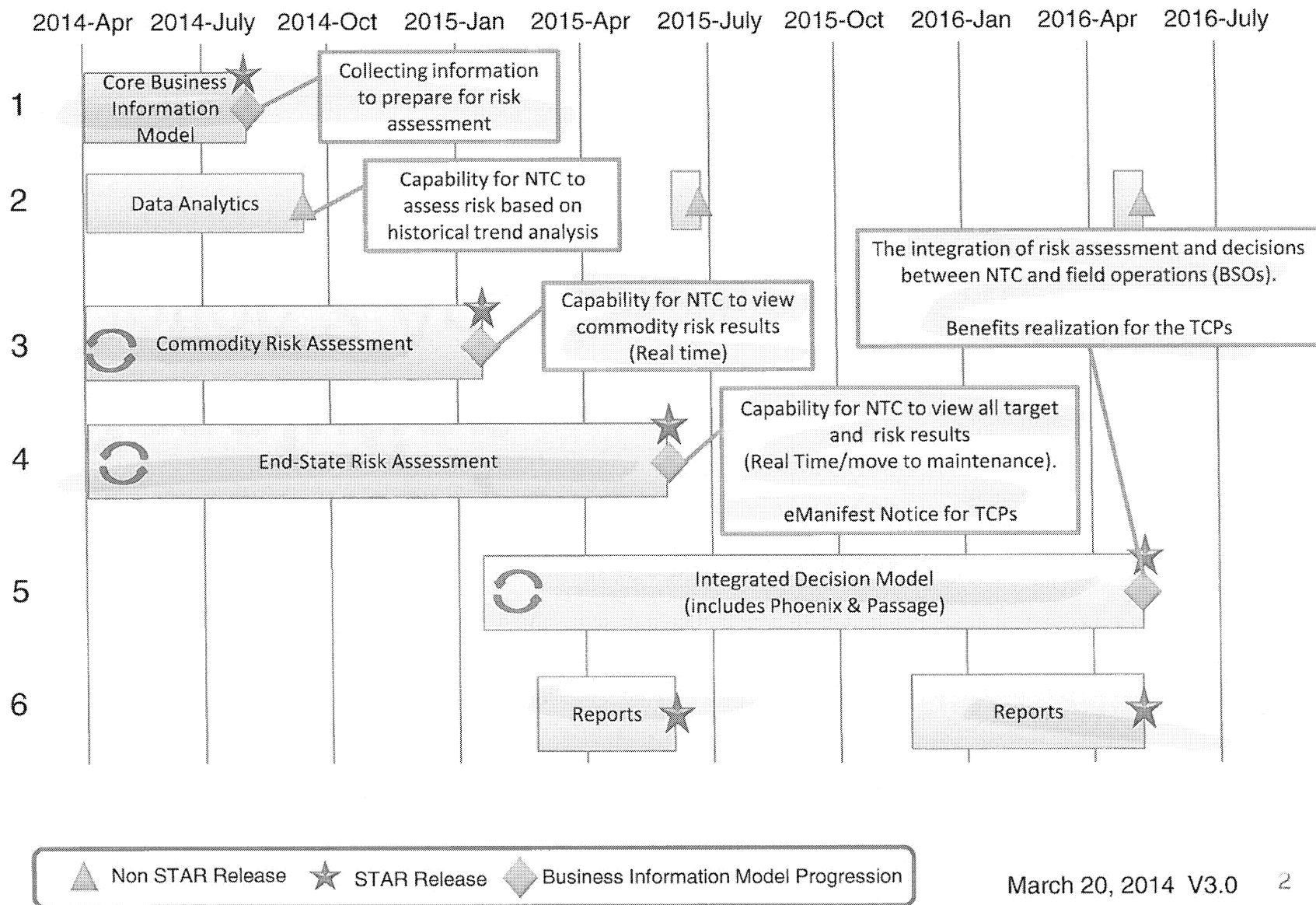
Risk Analysis & Resolution Option 2 Approach



March 20, 2014 V3.0

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Release Details

March 20, 2014 V3.0

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3



Core Business Information Model

(Stream #1)

Scope

- Transition existing trade document to establish the core business information model.
- Laying the foundation to prepare the trade documents to support risk assessment.
 - Commodity (Language Ware)
 - Address (QS-AVI)



Data Analytics

(Stream #2)

Scope

- Data warehouse (using existing Data Marts) operational on the new data warehouse appliance.
- Increased refresh frequency on a sub-set of the ACROSS data sources to support highway and rail movements.
- Copy the Business Information Model data (to be aligned with the progression dictated by the other eManifest streams).
- eManifest will provide a data exploitation expert within the NTC to assist existing intelligence officers.
- Any resulting actions or decisions will be performed in the existing applications (ACROSS/TITAN)

March 20, 2014 V3.0



Commodity Risk Assessment

(Stream #3)

Scope

- Commodity Risk Assessment using the Business Information Model.
- Provide the risk assessment results to the Intelligence Officers in the NTC.
- Utilize the Business Analytics to identify new Commodity Risk Rules
- Provide the ability to modify the Commodity Risk rules in production outside of a normal release cycle.
 - ODM Decision Center
 - ODM Rules Execution Centre (RES)
- Provide a read-only view of the Business Information Model and Commodity Risk results (Phoenix).
- Transition of Business Information Model and commodity risk results to the data analytics environment.
- Record user audit information.

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End-State Risk Assessment

(Stream #4)

Scope

- End-State Risk Assessment using the Business Information Model.
- Provide the risk assessment results to the Intelligence Officers in the NTC.
- Provide the ability to modify all Risk rules in production outside of a normal release cycle.
- Utilize the Business Analytics to identify new Risk Rules
- Provide the ability to utilize identity resolution to support Party based risk assessment:
 - MDM
- Provide the ability to manage and execute targets.
- Extending the Business Information Model to support all current trade document including IID.
- Provide an enhanced read-only view of the Business Information Model and Risk results (Phoenix) including user workload filters through the identification of low risk (ELR).
- Provide the ability to determine the operational impact of risk rule changes through simulation.
- Early delivery of eManifest end-state notices using legacy technology (ACROSS)
- Transition of Business Information Model and risk results to the data analytics environment.

March 20, 2014 V3.0



Integrated Decision Model

(Stream #5)

Scope

- Integrated Decisions using the end-state Business Information Model.
- Provide an integrated view of the Business Information Model and Risk Results to the front-line BSOs (Passage), the NTC targeting officers (Phoenix) and the Risk Assessment Program officers (RAPM).
- Provide the ability for the front-line BSOs (Passage) the NTC targeting officers (Phoenix) to make integrated operational decisions using the end-state Business Information Model.
- Extending the Business Information Model to support the end-state trade documents.
- Provide the ability to record referral details and examination results.
- Deliver eManifest notices using the end-state Business Information Model while still supporting the legacy notices.
- eManifest Portal enhanced to use the end-state Business Information Model.
- Legacy application (ACROSS/TITAN) downsized.
- Transition of Business Information Model, risk results and decisions to the data analytics environment.

March 20, 2014 V3.0



Reports

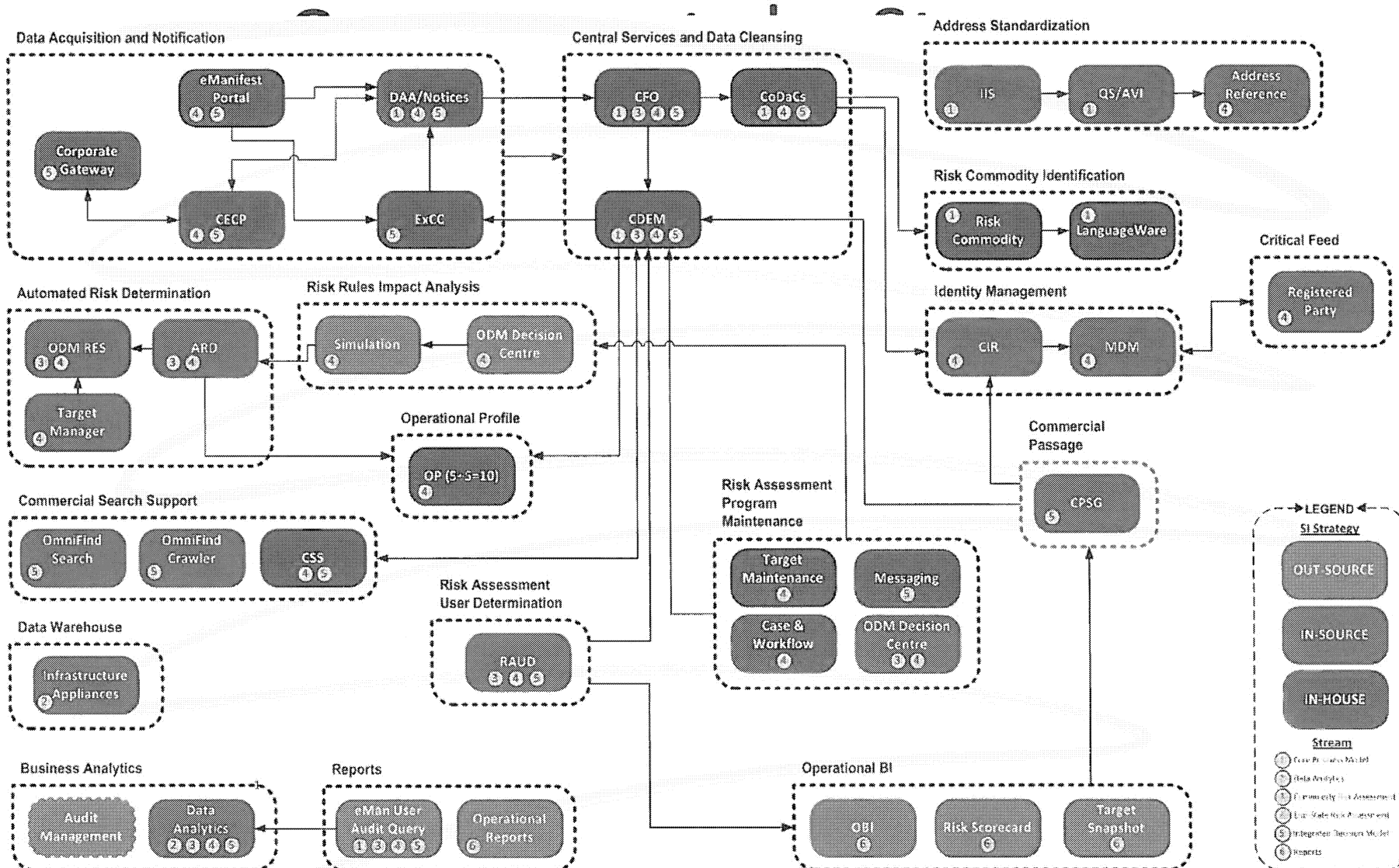
(Stream #6)

Scope

- Risk Assessment Operational Reports
- Risk Assessment Management Reports
- Passage Operational Reports
- Passage Management Reports

March 20, 2014 V3.0

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eManifest Project Recovery

Delivery Approach

Briefing to the Executive Committee (EC)

June 26, 2014

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Background

- On April 24, 2014 Options Analysis for eManifest Project Recovery were presented to Executive Committee (EC)
- EC approved the project team to proceed with the detailed planning, risk mitigation and third party endorsement activities for Option 2 - a hybrid delivery model addresses four (4) main risk areas and focuses on augmenting the current team competency and capacity with different forms of vendor relationships
- On May 9th 2014 a draft Detailed Project Plan with costs was presented to the AVP ISTB
- On May 30th 2014 preliminary findings from the 3rd party risk mitigation activities (architecture review, benchmarking, and sourcing analysis) were delivered
- On June 9th 2014 the 3rd party draft risk assessment report was delivered identifying remaining risk areas for the Option 2 Detailed Project Plan
- On June 12th 2014 the final 3rd Party risk assessment report was delivered with key recommendations for moving forward

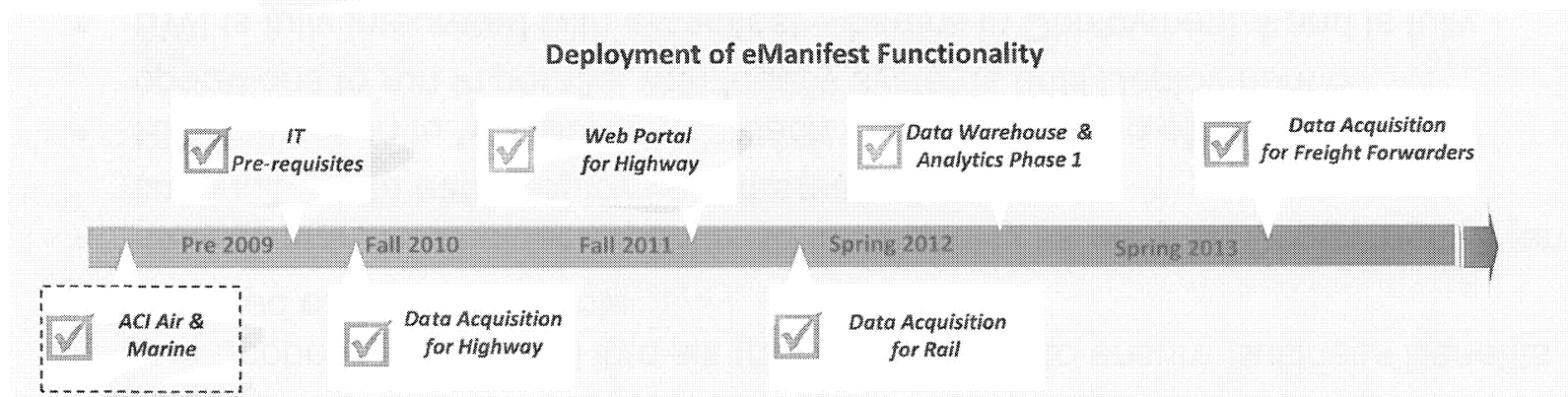


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 - SWI is fully integrated with eManifest – begins in Deployment 4 and is fully integrated and deployed as a part of Deployment 5
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eManifest Key Accomplishments to Date



Systems Deployed:

- ✓ Highway Cargo and Conveyance Reporting
- ✓ Rail Reporting
- ✓ eManifest Portal
- ✓ Freight Forwarder Reporting
- ✓ Air and Marine Conveyance Arrivals
- ✓ Manifest Forward
- ✓ Data Warehouse

Implementation Highlights:

- ✓ Over 11,000 highway carriers now engaged with eManifest
- ✓ 97% of Top 500 Carriers engaged
- ✓ Regulations progressing
- ✓ Multiple rounds of training for BSOs
- ✓ Regional network in place
- ✓ Established a program alignment structure to resolve outstanding issues
- ✓ Webinars, web content, presentations

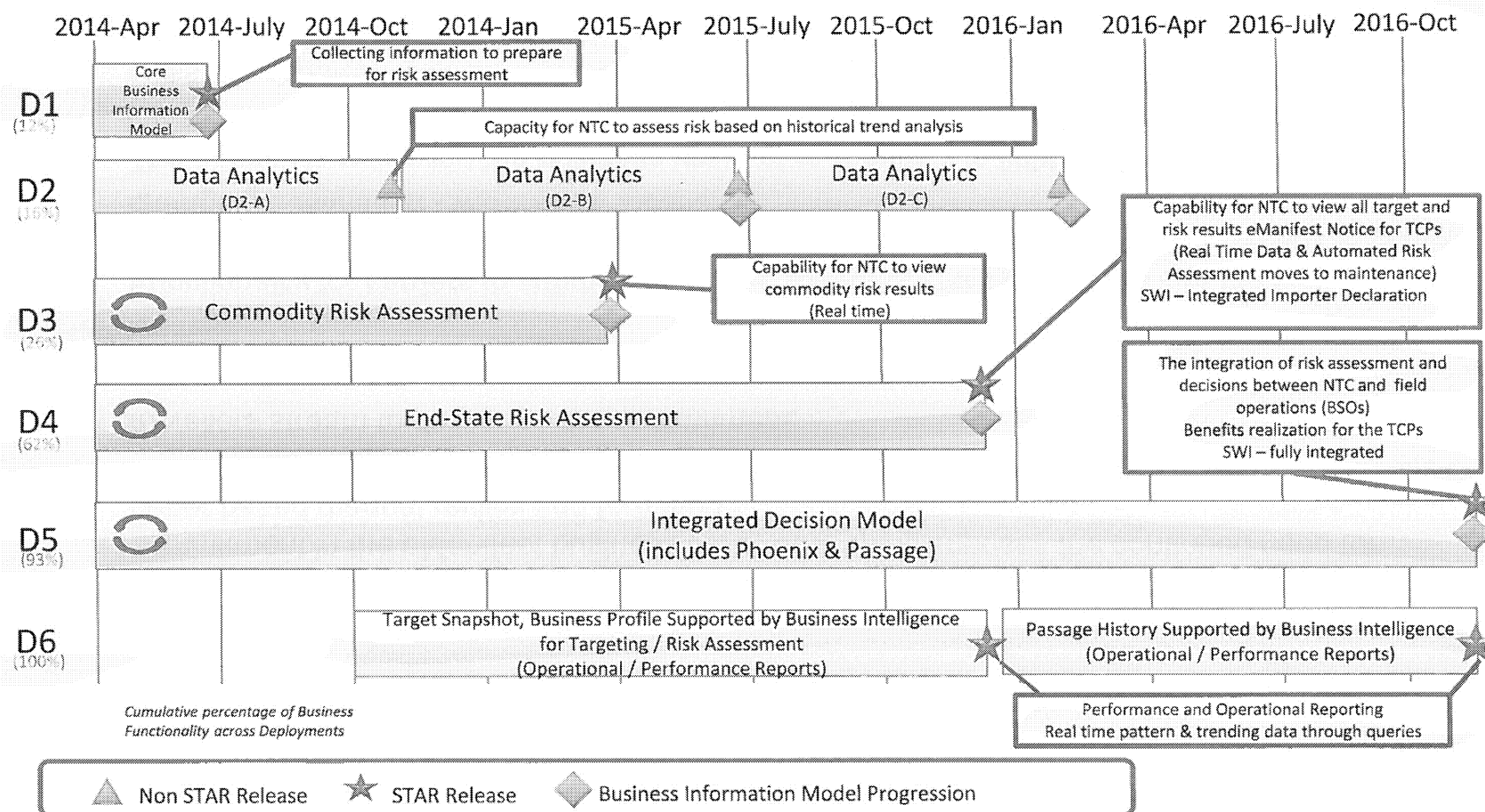


De-scoping impacts

- Crew
 - The ability to collect pre-arrival crew information for risk assessment and targeting was a commitment in the eManifest business case; descoping imposes the continued need for paper based manual review and targeting.
 - Delivery mechanisms will be sought through a maintenance release and/or joint initiatives in travellers stream to deliver on the commitment.
- Re-Manifest
 - Functionality for carriers to submit re-manifests electronically through EDI or the Portal. The CBSA requires a re-manifest to track transfers in liability between carriers or when goods are changing destination / warehouse location.
 - The agency is reviewing the business value of re-manifest in light of agency transformational initiatives; stakeholders support this review as it offers business process efficiencies.
 - Possible opportunity in changing requirement through the Cargo Control and Sufferance Warehouse Modernization Initiative



Delivery Approach Designed to Generate Early Benefits





Deployment 1

“Core Information Business Model”

Scope

- Electronic Data Capture
- Laying the foundation to prepare the trade documents to support risk assessment (building entity relationships)
 - Description of the High Risk Commodity identification supported by Language Ware.
 - Address data preparation supported by Quality Stage–Address Verification Interface (QS-AVI)

Business Outcomes

- Validation that the core business design is sound
 - Validation that the implemented COTS products provide the expected capability (e.g. ability to resolve an address – supports risk rules that look for commercial shipments destined to residential address, determine what type of commodity is being reported on the manifest)
- ✓ Implemented in Production – June 2014



Deployment 2

“Data Analytics”

Scope

- Data Analytics capability to assist intelligence officers / targeting teams in the National Targeting Centre (NTC) in the mining of the existing and historical trade data

Business Outcomes

-
-
- Modification of existing indicators based on analysis / outcomes and new data feeds
- **Target Production Date:**
 - Deployment 2A: October 2014
 - Deployment 2B: June 2015
 - Deployment 2C: February 2016



Deployment 3

"Commodity Risk Assessment"

Scope

- Start of Automated Risk Assessment
- Introduction of the risk results User Interface (UI) that supports the viewing of shipments
- Provide the ability to view and modify High Risk Commodity rules
- Implementation of High Risk Commodity rules to support Automated Risk Assessment of shipments

Business Outcomes

- Capability for the NTC to view High Risk Commodity risk results (Real Time) in all modes;
- Supports the ability to target or interdict high risk shipments using legacy commercial systems
- Ability for the Program to assess the performance of High Risk Commodity rules in new system vs. legacy system
- Validating and improving the Automated Risk Assessment results
- **Target Production Date:** March 2015



Deployment 4

"End-State Risk Assessment"

Scope

- Complete Automated Risk Assessment (all risk rules are executing and viewable)
- Implementation of initial eManifest new notices for Trade Chain Partners (TCPs)
- Implementation of the Single Window trade document (Integrated Import Declaration) as a release option
- Resolved identities of TCPs using Master Data Management
- Implementation of a risk rules simulation environment

Business Outcomes

- Capability for the NTC to view targets and all risk results (Real Time) in all modes
- Capability to assess the operational impact of implementing new risk rules (using simulation)
- The new notices provide desirable functionality to help improve communication between CBSA and its clients as well as business-to-business communication.
- Validation of the Risk Assessment Model (identification of low and high risk entities)
- Validation that the planned targeting work force can handle the volume

Target Production Date: December 2015



Deployment 5

"Integrated Decision Model"

Scope

- Integrated decisions and referrals (Risk Assessment, Passage and Single Window Initiative)
- Capture of examination results by front line operations
- End-state notices via Electronic Data Interchange and eManifest Portal
- Introduction of Advance Trade Data (ATD) from Importers
- Implementation of end state eManifest trade document submission

Business Outcomes

- Complete integration of risk assessment and passage decisions between NTC and field operations Border Services Officers (BSOs)
- Enhance Program integrity through "closing the loop" on examination results
- Advance Trade Data (ATD) in all modes supports Targeting Program – provides clarity on what commodities are being imported by whom
- Fully integrated commercial processing system and application, includes SWI
- New Documents and Notices available to external clients
- The eManifest system becomes the new system of record
- Full Benefits Realized for TCPs (Manifest Forward, Streamlined Border Processing)
- **Target Production Date: December 2016**

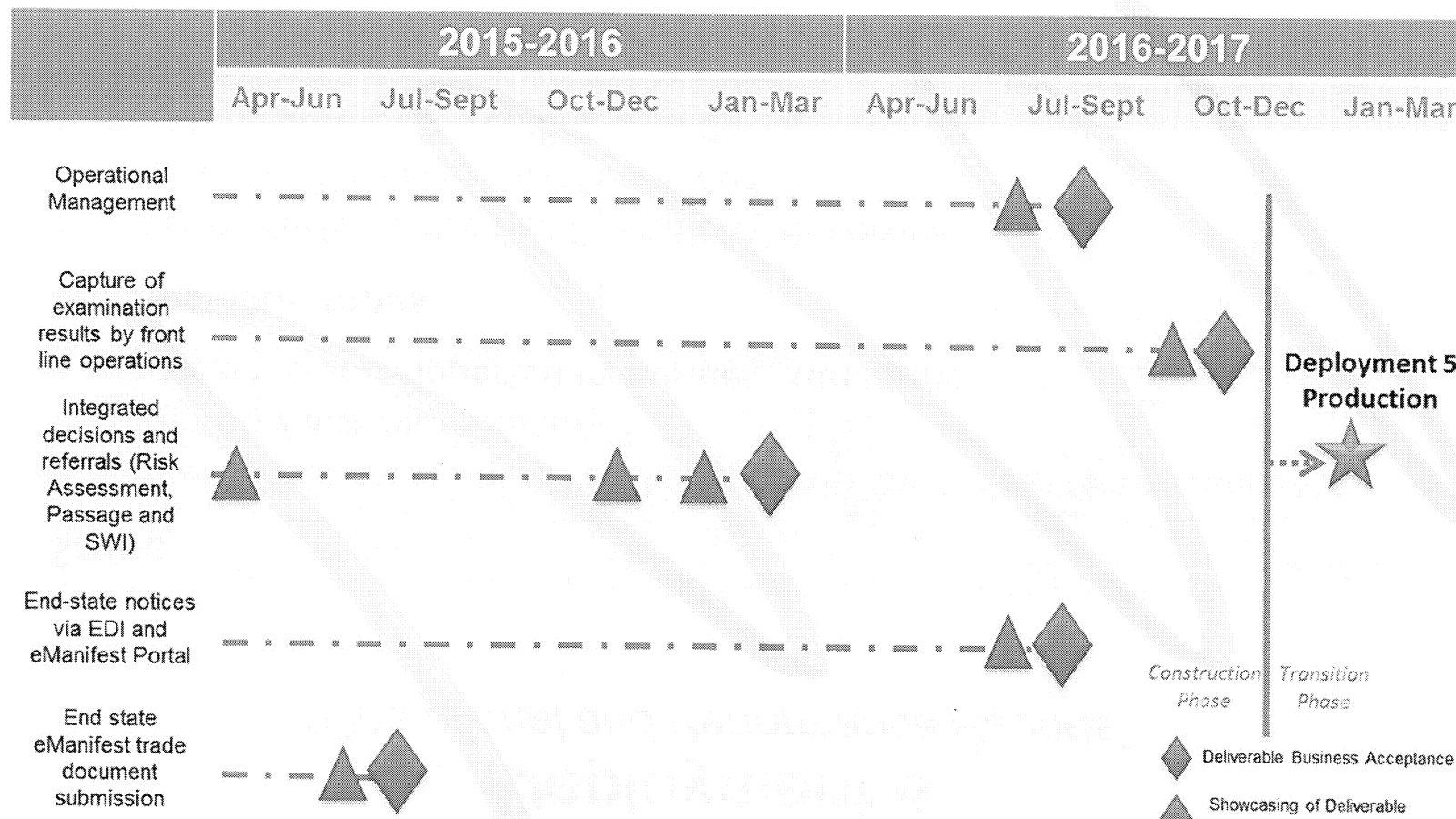


D5 Business Outcome Realization

- D5 rollout is structured around the completion of components such as risk assessment and data acquisition to create efficiencies in delivery of the passage requirements
- D5 is broken down into five deliverables that integrate together to deliver the full benefits realization
- Importer end-state eManifest trade documents will be delivered in D5 to align with the new system and avoid redundant costly work on ACROSS
- As a result, the integrated decision model is dependant on completion of the risk assessment component aligning risk assessment and passage as an integrated system of record



Deployment 5 - Deliverables & Timelines





Deployment 6

“Operational and Performance Reports”

Scope

- Target Snapshot, Business Profile Supported by Business Intelligence for Targeting / Risk Assessment
- Passage History Supported by Business Intelligence

Business Outcomes

- Program Performance and Operational Reporting
- Business Intelligence – Self Serve Model
- Real time pattern & trending data through queries
- **Target Production Date:**
 - Deployment 6A (aligns with D4 production): December 2015
 - Deployment 6B (aligns with D5 Production): December 2016



Gartner eManifest Project Assessment Executive Summary

Scope of the Assessment

Gartner has been asked to assess the eManifest recovery plan.
 This limits the analysis and possible recommendations.

Architecture Viability

The Architecture supports the realization of business benefits for eManifest.
 Non-functional requirements and the ability to meet them have yet to be confirmed.

Management of Risk

Past project delivery issues have been identified and risk mitigation actions developed.
 Executing those actions will be challenging.

Compressed delivery timelines

Project success will depend on prioritization of eManifest within the Agency.
 The magnitude of risk and change management is not fully appreciated.

Vendor Management

Procuring and managing complex outcome-based supply arrangements would prove very risky, given CBSA's current level of vendor management maturity.
 Executing new sourcing approaches may not yield the value being sought within eManifest's timelines.



eManifest Plan Endorsement Considerations

- Detailed planning of option 2 has occurred and resulted in an activity-based schedule with costs and the level of confidence by both third parties and in-house team members being much higher than previous plans
- CBSA will help to further mitigate some of the identified organization-wide project delivery and management risks
- Confirmation of re-baselined plan with TBS will be required

*Requesting approval to proceed with execution of the
 Option 2 Project Plan*



Communications

- External Stakeholders
 - External stakeholders will be advised of the new delivery plan with dates
 - A full communications strategy will be developed once the plan is approved
- Internal Stakeholders
 - Present re-baselined plan to CIOB
 - Briefing to TB
- Minister's Office
 - Provide an update on eManifest status and plan, impacts on BtB commitments, external stakeholders and regulatory package
- PCO
 - Continue to update BtB team of eManifest status and impacts on BtB commitments
- Staff and Unions
 - Communication of the HR Strategy with staff and unions will begin once plan has been approved
- SSC
 - They are on the recovery team but will also be formally briefed on the approved plan



HR Strategy

- Project Development Lifecycle will see shifts in resource allocation and skillsets as the Project moves through Development and into Testing & Implementation
- Business and Systems Analysts will begin transitioning to Maintenance & to new project work through this fiscal and into 2015/2016
- Considering various external delivery assistance options for Business Intelligence (D6) along with the work done to date within the Agency.



Canada Border
Services Agency

Agence des services
frontaliers du Canada



eManifest Project Update

Briefing to the Chief Information Officer Branch

May 2015

Commercial Projects Directorate

PROTECTION

SERVICE

INTEGRITY

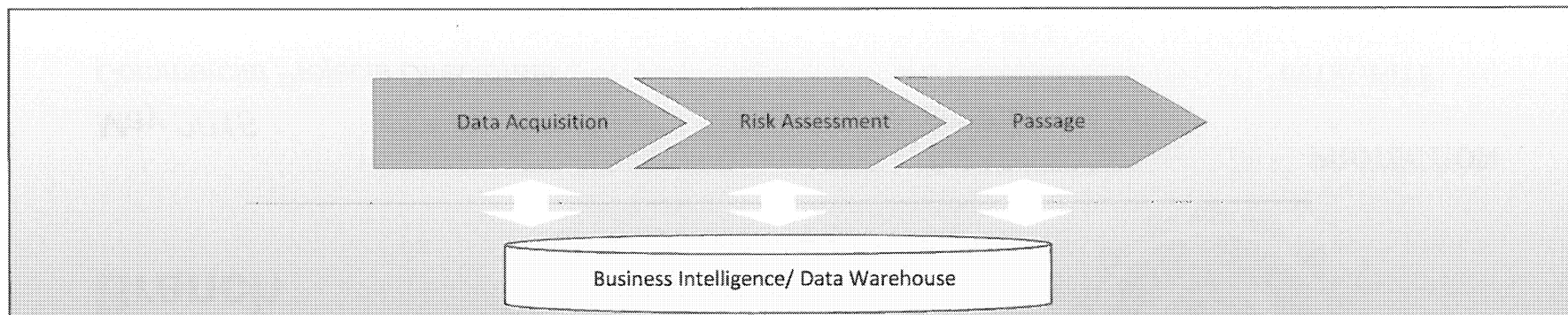


PROTECTION • SERVICE • INTEGRITY

Canada



eManifest at End State



DATA ACQUISITION

Pre-arrival advance information from all Trade Chain Partners for all modes

- Electronic reporting environment (Electronic Data Interchange and eManifest Portal) in which carriers, freight forwarders, brokers and importers will electronically transmit information related to conveyances, cargo and importer admissibility data.
- Portal provides the foundation for future CBSA web applications.



INTEGRATED PRE-ARRIVAL RISK ASSESSMENT

Centralized targeting based on rigorous risk assessment

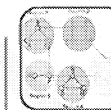
- Automatically screen commercial shipments for indications of risk prior to departure for Canada.
- Identify high or unknown-risk "entities" shipments, conveyances, equipment while facilitating the flow of legitimate low-risk trade.
- Enhanced ability for CBSA to risk assess more effectively and direct resources to shipments, conveyances, equipment posing the highest risk to Canada's health, safety and security.



PASSAGE

Enhanced Passage application for BSOs including GUI technology

- Introduce the use of a graphical User Interface (GUI) for BSOs working at Primary Inspection Line, Front Counter, and Secondary Examinations.
- Provide CBSA officers with a user-friendly interface to the many supporting systems.
- Integrate decision making and examination results capturing processes (closing the loop).



BUSINESS INTELLIGENCE/ DATA WAREHOUSE

Business Intelligence Tools to support continuous improvements to risk assessment to adapt to changing risk environment.

- Strengthens and modernizes CBSA risk assessment systems and processes.
- Expands information analytics, pattern and trend analysis and reporting capabilities to support commercial programs, compliance monitoring and performance measurement.

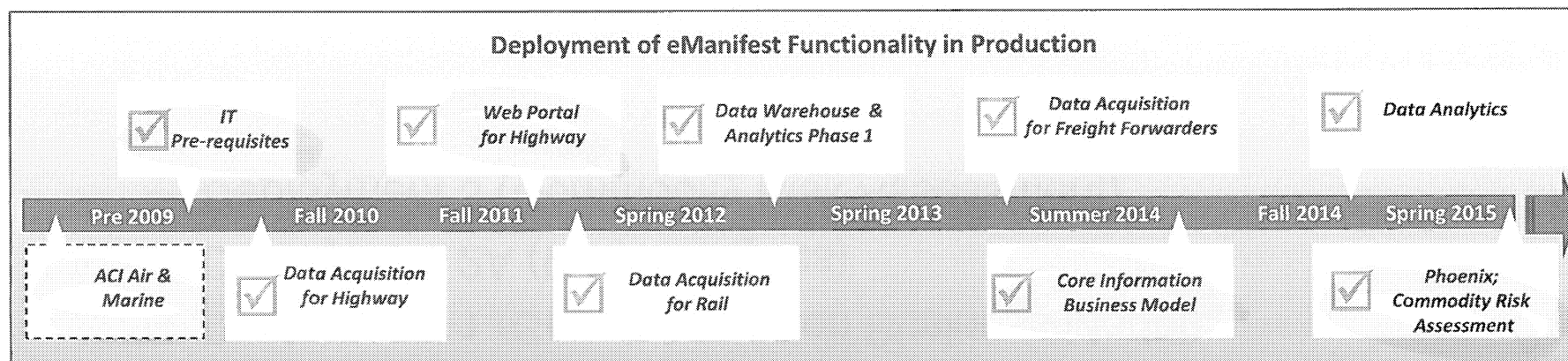


Project Update

- The project has been executing against the re-baselined plan since June 2014.
- To date, the following releases have been delivered on time and on budget.
 - Deployment 1 (Core Information Business Model)
 - Deployment 2A (Data Analytics)
 - Deployment 3 (Commodity Risk Assessment)



eManifest Accomplishments to Date



Systems Deployed:

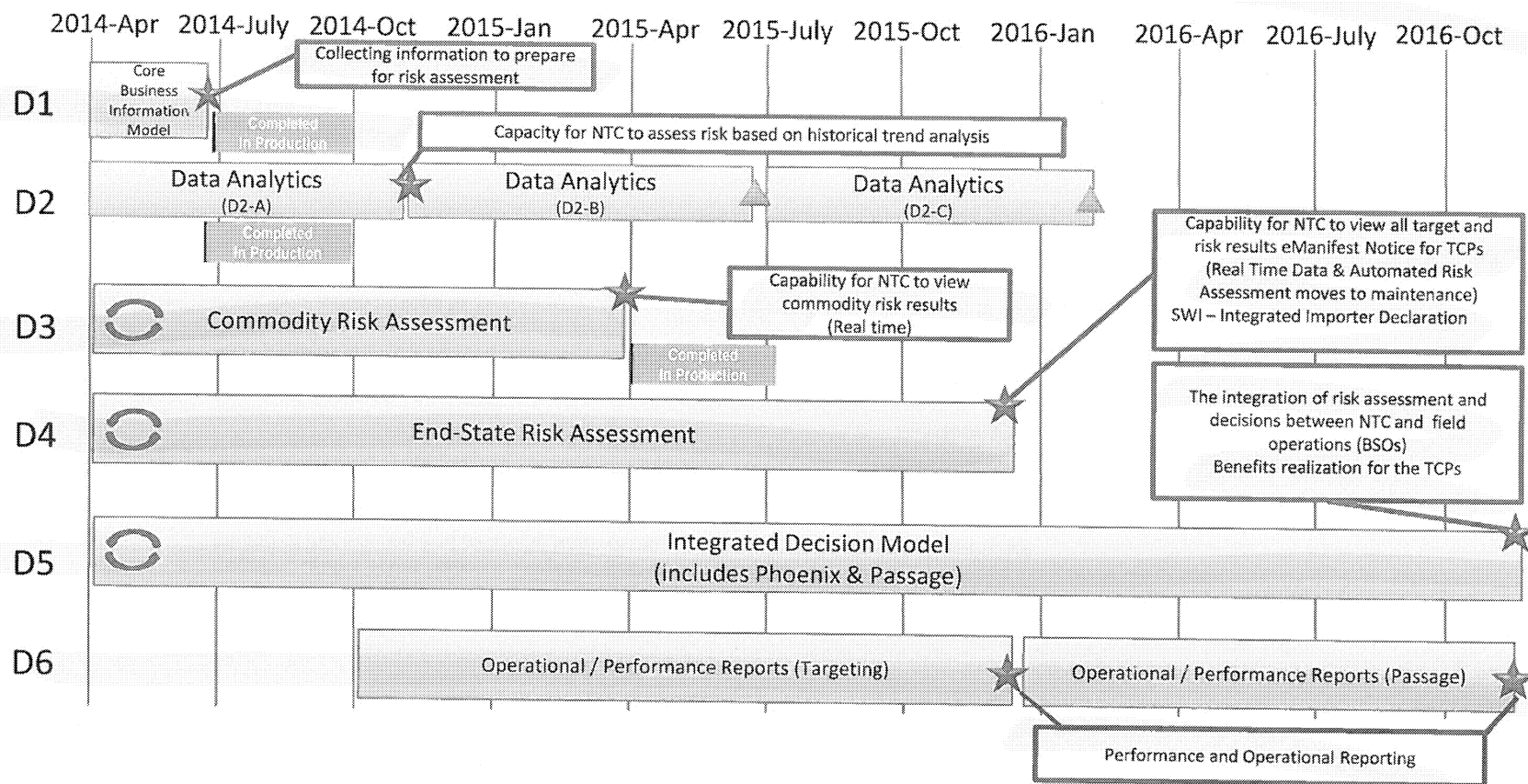
- ✓ Highway Cargo and Conveyance Reporting
- ✓ Rail Reporting
- ✓ eManifest Portal
- ✓ Freight Forwarder Reporting
- ✓ Air and Marine Conveyance Arrivals
- ✓ Manifest Forward
- ✓ Data Warehouse
- ✓ Core Information Business Model
- ✓ Data Analytics
- ✓ Phoenix

Implementation Highlights:

- ✓ More than 8,600 highway carriers engaged with eManifest, representing 96% of all electronic and paper highway volumes
- ✓ 8 of the 11 rail carriers engaged with eManifest
- ✓ More than 300 freight forwarders engaged with eManifest and client uptake continues to increase
- ✓ Multiple rounds of training for BSOs have been delivered and an effective regional support network is in place
- ✓ Webinars, Web content, presentations



Delivery Approach Designed to Generate Early Benefits





Benefits of Deployments

Deployment	CBSA Benefit	Trade Benefit
Deployment 1 (June 2014)	<ul style="list-style-type: none"> Foundation to prepare the trade documents to support risk assessment; facilitates screening & review of information 	<ul style="list-style-type: none"> Trade documents are presented to CBSA users (targeting teams / border service officers) in clear manner; reduces need for Request For Information / Clarification from Trade
Deployment 2 (October 2014)	<ul style="list-style-type: none"> Provide Data Analytics capability to assist intelligence officers / targeting teams in the National Targeting Centre (NTC) in the mining of the existing and historical trade data. 	<ul style="list-style-type: none"> Allows more focused targeting by the Agency; avoids false positives that can result in examinations or Requests For Information
Deployment 3 (March 2015)	<ul style="list-style-type: none"> Capability for the NTC to view High Risk Commodity risk results (Real Time) in all modes 	<ul style="list-style-type: none"> Allows more focused targeting by the Agency; avoids false positives that can result in examinations or Requests For Information
Deployment 4 (December 2015)	<ul style="list-style-type: none"> Complete Automated Risk Assessment (all risk rules are executing and viewable) New disposition notices to Trade advising of status of shipment Integrate border processes with Single Window Initiative 	<ul style="list-style-type: none"> Improved identity resolution within targeting system (reduces false positives) Implementation of initial eManifest new notices for Trade Chain Partners (TCPs) Implementation of the Single Window trade document (Integrated Import Declaration) as a release option
Deployment 5 (December 2016)	<ul style="list-style-type: none"> Integrated decisions and referrals capability (Risk Assessment, Passage and Single Window Initiative) Complete integration of risk assessment and passage decisions between NTC and field operations Advance Trade Data in all modes supports Targeting Program The eManifest system becomes the new system of record 	<ul style="list-style-type: none"> Introduction of Advance Trade Data (ATD) from Importers Implementation of end state eManifest trade document submission Fully integrated commercial processing system and application New Documents and Notices available to external clients Full Benefits Realized for TCPs (Manifest Forward, Streamlined Border Processing)
Deployment 6 (December 2016)	<ul style="list-style-type: none"> Provide the Agency with the following reporting capabilities: <ul style="list-style-type: none"> - Operational and Management Risk Assessment Reporting - Operational and Management Reporting for Passage - Program Performance and Operational Reporting Increased Decision Support for Programs Ability to generate compliance monitoring reports 	<ul style="list-style-type: none"> Provides Programs with reports to measure effectiveness; strengthen Program Integrity – better understand Service Level impacts on Trade



Stakeholder Engagement

- To ensure successful implementation throughout all deployments, the CBSA conducts outreach activities and maintains open lines of communication with external stakeholders.
- This enables the Agency and stakeholders to identify and address any potential process or technical issues related to implementation.



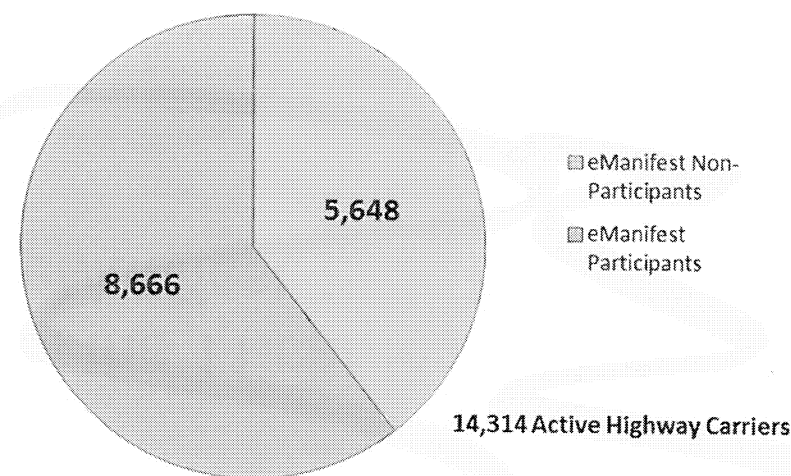
Current and Upcoming Implementation Activities

- Upon announcement of the regulations, the CBSA will launch the regulatory changes in Regulatory Package 1 Parts 1 & 2 that will mandate the requirement for industry stakeholders to submit new documents:
 - Part 1 – Highway/Rail (Cargo and Conveyance Information)
 - Part 2 – Freight Forwarders (Supplementary Information – Electronic Housebill)
- Following the launch of D3 on March 29, 2015 the Agency will continue the conversion of Trade Partners until end state.
- The CBSA will also continue change management and training activities.
- A comprehensive implementation strategy for D5 is being developed.



Client Uptake – Highway Carriers

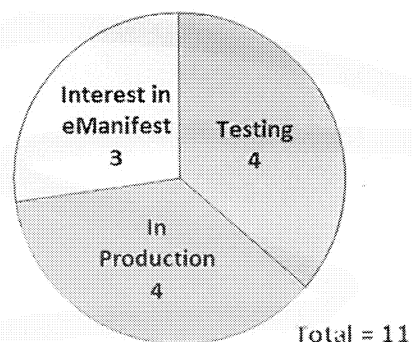
- There are 14,314 active highway carriers through FY 14-15.
- Of the active highway carriers, 8,666 are eManifest ready in production, eManifest in testing and/or active, pending inactive or suspended in the eManifest Portal.
- The 8,666 carriers, represent 96% of all highway volumes, both electronic and paper, currently through FY14-15.





Client Uptake – Rail Carriers

- 11 rail carriers currently represent 100% of all rail volumes, both electronic and paper, through FY14-15.
- As of February 2015, eight of the 11 carriers are in production or are in testing eManifest.

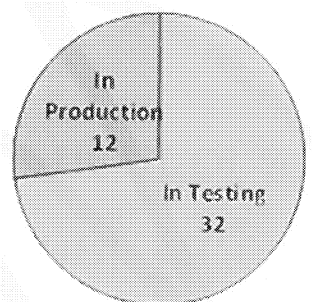




Client Uptake – Freight Forwarders

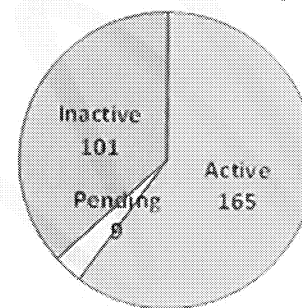
- There are 992 total registered freight forwarder codes as of February 28, 2015.
- 319 freight forwarders are engaged in eManifest and Portal registrations.

EDI Client Registrations
(Jan 2015)



Total = 44

eManifest Portal Client
Registrations (Feb 2015)



Total = 275



Next Steps

- Ongoing support for the implementation of Deployment 2 and 3 at the National Targeting Centre.
- Continue development of all remaining project deployments.
- Ongoing communication and outreach with stakeholders through the Border Commercial Consultative Committees.



Appendix



eManifest DB (P1)

- **Cost**
 - The eManifest project has an approved budget of \$415.1M.
 - Fiscal 2014/15 actuals are reporting \$38.8M with a forecast of \$41.4M for 2015/16 and \$39.9M for fiscal 2016/17.
- **Schedule**
 - The project will be formally presenting to TIPP a request for change related to the Deployment 4 (D4) production dates on May 6, 2015. D4 will be delivered in two releases.
- **Scope**
 - To date we have 43 approved request for change with an estimated 2599 effort days and an estimated cost of \$1.574M.
 - During P1, we have approved one RFC that has added an estimate 44.3 effort days to Deployment 5 (D5) and an estimated cost increase of \$26K.



eManifest DB (P1) cont.

- Issue
 - The project is currently tracking 3 open issues;
 1. (IL-118) Roll-out for SPSS software upgrade to V16 has encountered delays.
 - Resolution Plan: Options analysis underway. Escalated to management for direction and resolution.
 2. (IL-117) The SWI maintenance release will create resource contention for D4 as the ACROSS team will be dedicated to the maintenance release and production support.
 - Resolution Plan: Resource levelling exercise is on-going to assess gaps in resourcing to minimize impact.
 3. (IL-112) There is resource contention between D4 and D5 projects.
 - Resolution Plan: Use staff augmenting supply arrangements to fill resource gap where necessary.



eManifest P1 Dashboard

Executive Project Dashboard										
Organization: Canada Border Services Agency			Project Phase: Execution			Project Complexity and Risk Rating: Level 4 - Transformational			Project Health	Y
Project: eManifest			Report as of: 2015-Apr-30			Next Project Gate: 6 – Construction Complete and Deployment Readiness				
Executive Summary			Project Sponsor: Maurice Chénier, Richard Wex							
Current Period: Deployment 4 (D4) project plan has been baselined										
Forecast: Project will formally present the request for change related to D4 production dates in May, 2015 for governance approval. D4 will be delivered in two iterations.										
Overall Status: The project overall health is yellow. Remaining risks and issues are being mitigated										
Business Outcomes										
• Enhance CBSA capacity to provide a pre-arrival risk determination prior to the arrival of goods in Canada										
• Provide CBSA with the ability to conduct more effective enforcement activities.										
• Enable CBSA, PGAs & TCPs to evolve toward an automated eCommerce importation process in line with international standards										
Financial Summary (six quarters)										
<div><div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>Q2 - 14/15</div><div>Q3 - 14/15</div><div>Q4 - 14/15</div><div>Q1 - 15/16</div><div>Q2 - 15/16</div><div>Q3 - 15/16</div></div><div><div>Approved</div><div>Actual / Forecast</div></div><div><div>\$13.37</div><div>\$15.23</div></div><div><div>\$13.37</div><div>\$10.94</div></div><div><div>\$13.37</div><div>\$9.24</div></div><div><div>\$10.35</div><div>\$10.35</div></div><div><div>\$10.35</div><div>\$10.35</div></div><div><div>\$10.35</div><div>\$10.35</div></div></div>										
Project Risk										
Top Risks										
Y										
Project Scope / Requests for Change (RFC)										
G										
Project Issues										
Y										
Project Completion										
2017-Mar-31 2017-Mar-31 0										
Project Schedule										
Project Launch Date: 2006-Oct-05										
Key Milestones/Deliverables										
Approved Completion Date Forecast Completion Date Variance (months)										
Deployment 3: Commodity Risk Assessment 25-Mar-2015 29-Mar-2015 -0.13										
SSC (D4) MDM Non-Production 20-May-2015 20-May-2015 0.00										
Deployment 2B: Data Analytics 3-Jun-2015 29-Jun-2015 -0.84										
SSC (D2C) SPSS Server Availability 24-Jun-2015 24-Jun-2015 0.00										
(RL-112) Procurement: Resource Continuity - Request for Procurement 30-Sep-2015 30-Sep-2015 0.00										
SSC (D2C) Datastage Server Availability 10-Oct-2015 10-Oct-2015 0.00										
Deployment 4: End State Risk Assessment 3-Dec-2015 3-Dec-2015 0.00										
Deployment 6A: Operational / Performance Reports 3-Dec-2015 3-Dec-2015 0.00										
Deployment 2C: Data Analytics 3-Feb-2016 3-Feb-2016 0.00										
SSC (D4) MDM Production High Availability 29-Mar-2016 29-Mar-2016 0.00										
Deployment 5: Integrated Decision Model / (Phoenix/Passage Applications) 16-Dec-2016 16-Dec-2016 0.00										
Deployment 6B: Operational / Performance Reports 16-Dec-2016 16-Dec-2016 0.00										
Project Closeout 31-Mar-2017 31-Mar-2017 0.00										
Project Completion 2017-Mar-31 2017-Mar-31 0										



Deployment 1

“Core Information Business Model”

Scope

- Electronic Data Capture
- Laying the foundation to prepare the trade documents to support risk assessment (building entity relationships)
 - Description of the High Risk Commodity identification supported by Language Ware.
 - Address data preparation supported by Quality Stage–Address Verification Interface (QS-AVI)

Business Outcomes

- Validation that the core business design is sound
 - Validation that the implemented COTS products provide the expected capability (e.g. ability to resolve an address – supports risk rules that look for commercial shipments destined to residential address, determine what type of commodity is being reported on the manifest)
- ✓ Implemented in Production – June 2014



Deployment 2

"Data Analytics"

Scope

- Data Analytics capability to assist intelligence officers / targeting teams in the National Targeting Centre (NTC) in the mining of the existing and historical trade data

Business Outcomes

-
-
- Modification of existing indicators based on analysis / outcomes and new data feeds

Target Production Date:

- ✓ Deployment 2A: Implemented in Production - October 2014
- Deployment 2B: June 2015
- Deployment 2C: February 2016



Deployment 3

"Commodity Risk Assessment"

Scope

- Start of Automated Risk Assessment
- Introduction of the risk results User Interface (UI) that supports the viewing of shipments
- Provide the ability to view and modify High Risk Commodity rules
- Implementation of High Risk Commodity rules to support Automated Risk Assessment of shipments

Business Outcomes

- Capability for the NTC to view High Risk Commodity risk results (Real Time) in all modes;
- Supports the ability to target or interdict high risk shipments using legacy commercial systems
- Ability for the Program to assess the performance of High Risk Commodity rules in new system vs. legacy system
- Validating and improving the Automated Risk Assessment results

Target Production Date:

✓ March 29, 2015



Deployment 4

"End-State Risk Assessment"

Scope

- Complete Automated Risk Assessment (all risk rules are executing and viewable)
- Implementation of initial eManifest new notices for Trade Chain Partners (TCPs)
- Implementation of the Single Window trade document (Integrated Import Declaration) as a release option
- Resolved identities of TCPs using Master Data Management
- Implementation of a risk rules simulation environment

Business Outcomes

- Capability for the NTC to view targets and all risk results (Real Time) in all modes
- Capability to assess the operational impact of implementing new risk rules (using simulation)
- The new notices provide desirable functionality to help improve communication between CBSA and its clients as well as business-to-business communication.
- Validation of the Risk Assessment Model (identification of low and high risk entities)
- Validation that the planned targeting work force can handle the volume

Target Production Date: December 2015



Deployment 5

“Integrated Decision Model”

Scope

- Integrated decisions and referrals (Risk Assessment, Passage and Single Window Initiative)
- Capture of examination results by front line operations
- End-state notices via Electronic Data Interchange and eManifest Portal
- Introduction of Advance Trade Data (ATD) from Importers
- Implementation of end state eManifest trade document submission

Business Outcomes

- Complete integration of risk assessment and passage decisions between NTC and field operations Border Services Officers (BSOs)
- Enhance Program integrity through “closing the loop” on examination results
- Advance Trade Data (ATD) in all modes supports Targeting Program – provides clarity on what commodities are being imported by whom
- Fully integrated commercial processing system and application, includes SWI
- New Documents and Notices available to external clients
- The eManifest system becomes the new system of record
- Full Benefits Realized for TCPs (Manifest Forward, Streamlined Border Processing)

Target Production Date: December 2016



Deployment 6

“Operational and Performance Reports”

Scope

- Risk Assessment: Operational and Management Reports
- Passage: Operational and Management Reports

Business Outcomes

- Program Performance and Operational Reporting
- Increased Decision Support for Programs

Target Production Date:

- Deployment 6A (aligns with D4 production): December 2015
- Deployment 6B (aligns with D5 Production): December 2016

External Audit Committee Briefing

Commercial Projects Directorate

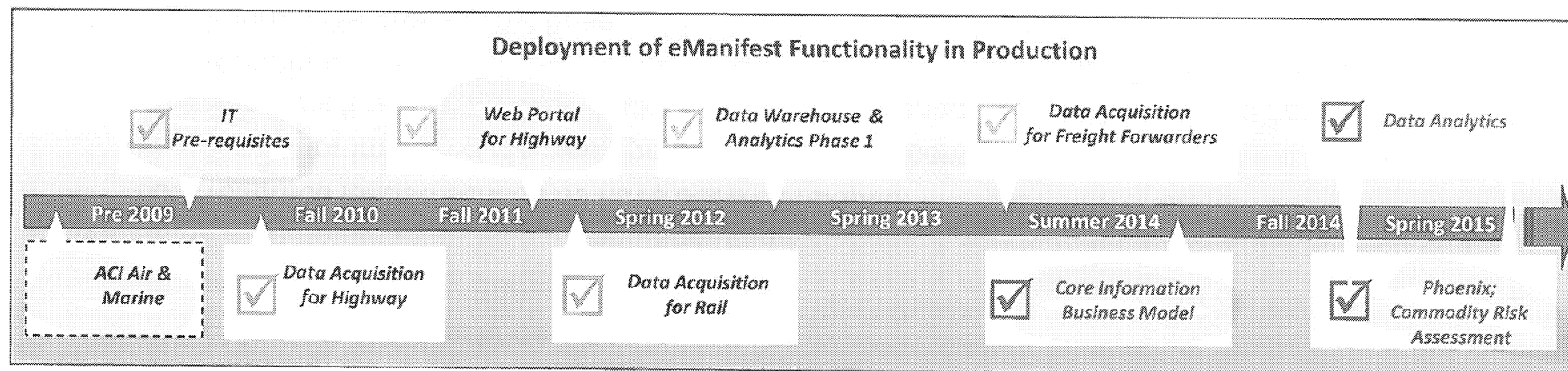


Presentation Overview

- Executive summary of recent project management activities since the External Audit Committee briefing in September 2014:
 - Project Governance and Reporting,
 - Financial Reporting and Tracking.
- Project Accomplishments
- Legislation and External Outreach Update
- Overview of the Project Deployment 2A (Data Analytics) implemented in October 2014.
- Overview of the Project Deployment 3 (Commodity Risk Assessment) implemented in March 2015.



eManifest Accomplishments to Date



Systems Deployed:

- ✓ Highway Cargo and Conveyance Reporting
- ✓ Rail Reporting
- ✓ eManifest Portal
- ✓ Freight Forwarder Reporting
- ✓ Air and Marine Conveyance Arrivals
- ✓ Manifest Forward
- ✓ Data Warehouse
- ✓ Core Information Business Model
- ✓ Data Analytics
- ✓ Phoenix

Implementation Highlights:

- ✓ More than 8,600 highway carriers engaged with eManifest, representing 96% of all electronic and paper highway volumes
- ✓ 8 of the 11 rail carriers engaged with eManifest
- ✓ More than 300 freight forwarders engaged with eManifest and client uptake continues to increase
- ✓ Multiple rounds of training for BSOs have been delivered and an effective regional support network is in place
- ✓ Webinars, Web content, presentations



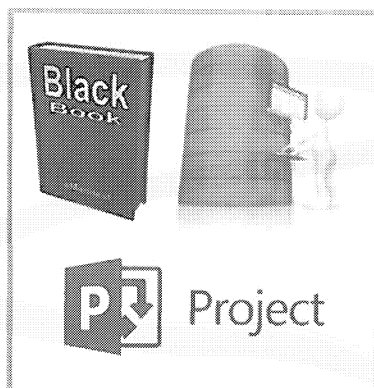
Project Management Update

- eManifest has implemented the recommended Gartner governance structure:
 - Decision making is streamlined and better aligned with appropriate levels and
 - Project Authority and TIPP govern high likelihood risks
 - Project Authority decides majority of governance related issues
 - Significantly enhances project efficiency
 - A Change Management Process has been fully established.
- eManifest has implemented more rigorous reporting:
 - eManifest TBS Dashboard and
 - eManifest Monthly Earned Value Report.
- Fully resource loaded schedules have been developed:
 - Allows for improved clarity on percentage of work complete;
 - Supports financial tracking, tasks authorization management, earned value based status reporting; and
 - Informs the project cost base.



Managing Performance to Stay on Track

Project Support & Control Office (PSCO)



Schedule & Financial Monitoring

- Weekly Schedule Monitoring
- Cross-reference Schedule to Enterprise time tracking
- Professional/ Procurement costs

Project Support & Control Office (PSCO)



Performance Data Consolidation

- Aggregation of financial and progress reports
- Project Dashboard updates
- Feeds schedule & financial dashboard risk ratings

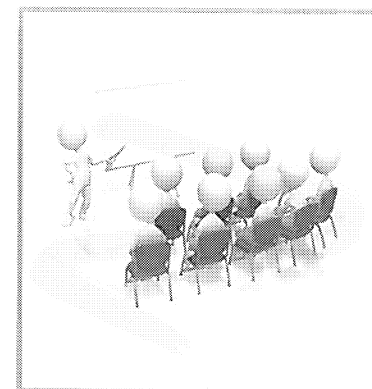
PSCO & eManifest Project Managers/Executives



Oversight & Governance

- Project Integration Board
- Weekly Leadership meetings with AVP
- Bi- Weekly DG Health Check
- Project Advisory Committee
- Transformation, Innovation and Project Portfolio Committee
- Senior Project Advisory Committee

Enterprise Project Management Office

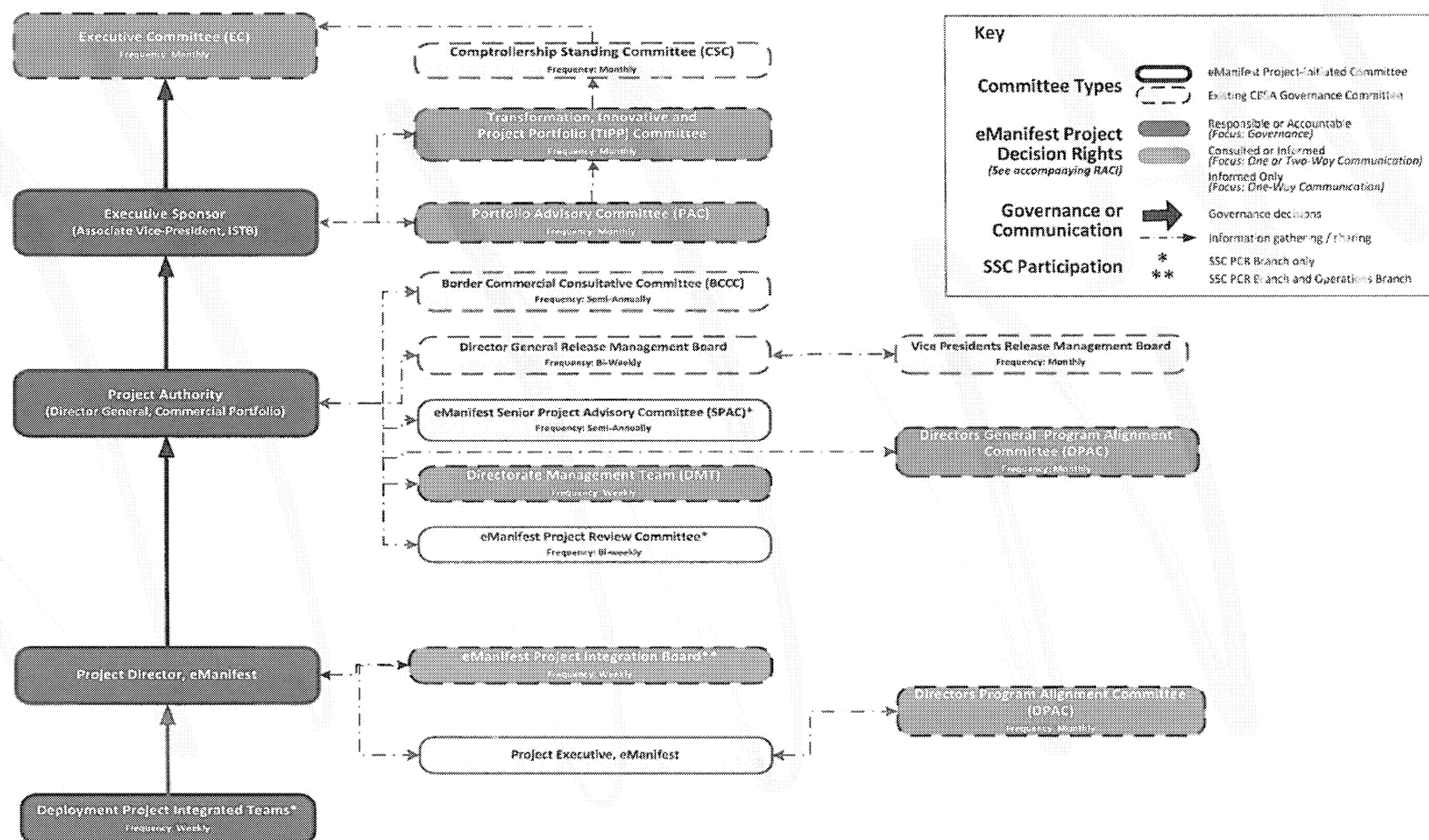


Enterprise Oversight

- Dashboard reporting
- Monitoring & Control
- Agency level risk management and portfolio performance management

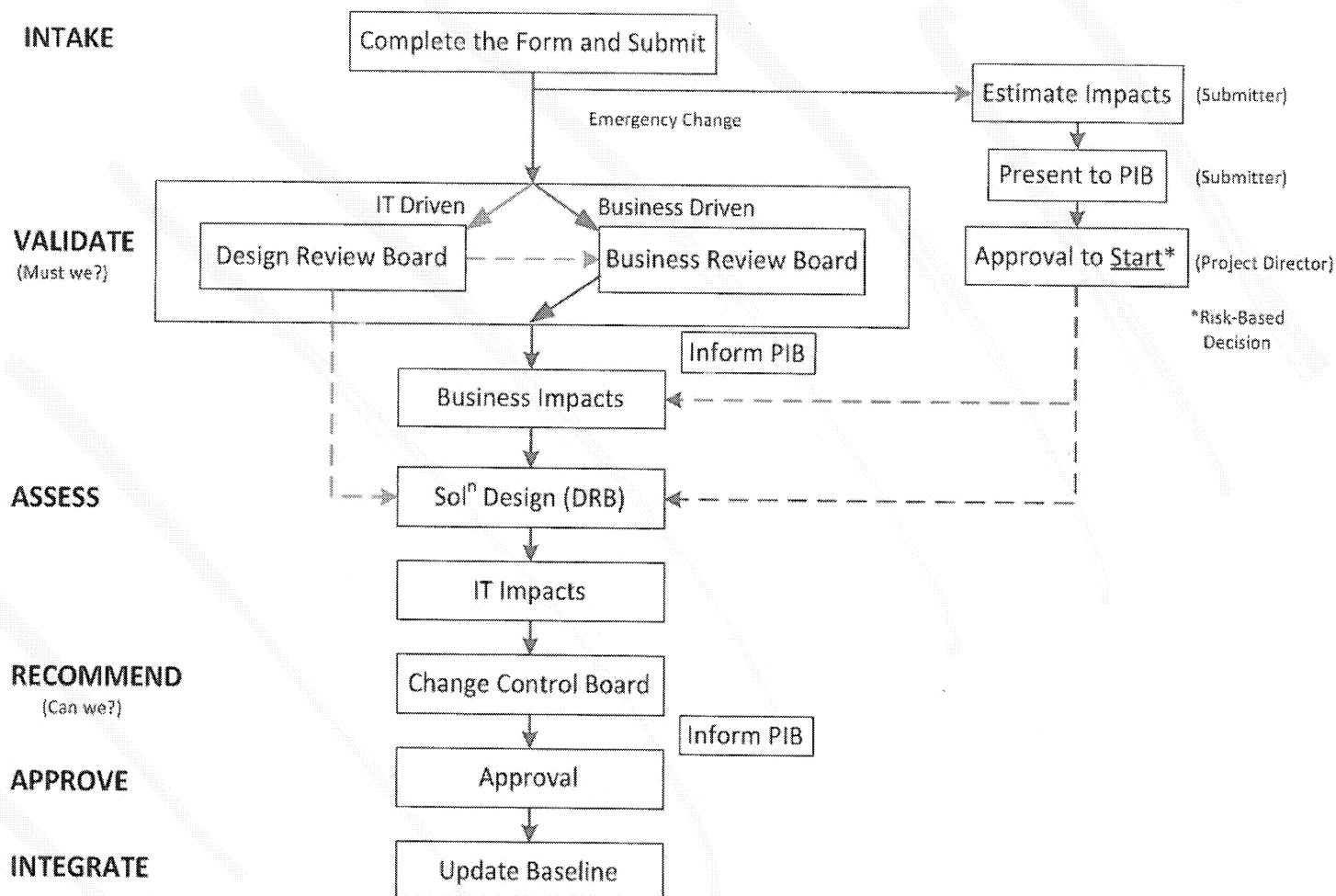


eManifest Governance





eManifest Change Management Process





eManifest Reporting

- Project team has scheduled monthly meetings with the Enterprise Project Management Office (EPMO) to review the dashboard to ensure compliancy with TBS reporting requirements and/or Agency corporate standards.
- eManifest has updated the reported dashboard financials to align with corporate reporting requirements.

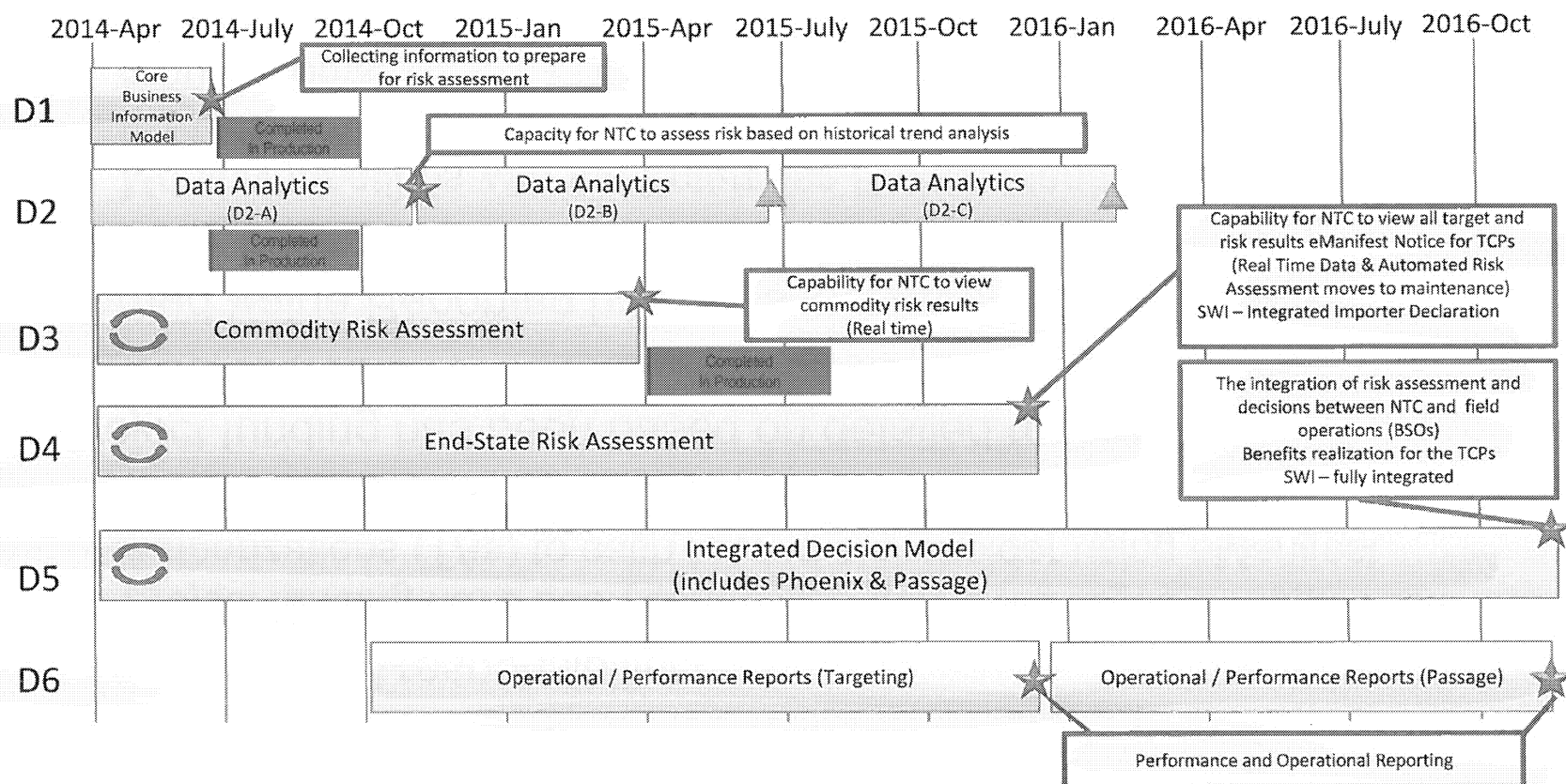


Financial Reporting & Tracking

- Improved fiscal responsibility:
 - Project funding have been centralized and is managed through Task Authorizations (TAs) to each funded stakeholder using eManifest Deployment schedules as the main driver.
- Project funding has been based on detailed resource loaded schedules (resources attributable by name).
- Earned Value Reporting has been implemented and is reported on a monthly basis:
 - Monthly meetings with the Enterprise Project Management Office (EPMO) are scheduled to ensure compliancy with corporate reporting requirements.
 - Monthly challenge sessions are held with the Executive Sponsor, Project Authority and Project Director.



Delivery Approach Designed to Generate Early Benefits





Baselined Plan Costing

Development Costs	2014/15				2015/16				2016/17				Total			
	FTE	Consultant	Other O&M	TOTAL	FTE	Consultant	Other O&M	TOTAL	FTE	Consultant	Other O&M	TOTAL	FTE	Consultant	Other O&M	TOTAL
D1 - Core Business Information Model	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
D2 - Data Analytics	\$1 031 979	\$915 298	\$479 697	\$2 426 908	\$309 464	\$215 100	\$200 265	\$724 829	\$0	\$0	\$0	\$0	\$1 341 437	\$1 130 398	\$679 902	\$3 151 737
D3 - Commodity Risk Assessment	\$3 135 984	\$4 312 805	\$3 140 127	\$10 588 915	\$1 018 022	\$1 546 863	\$872 123	\$3 437 008	\$509 396	\$218 022	\$654 757	\$1 382 174	\$4 663 401	\$6 077 689	\$4 667 007	\$15 408 098
D4 - End-State Risk Assessment	\$5 677 153	\$6 031 690	\$2 933 383	\$14 642 226	\$3 620 044	\$2 607 246	\$1 768 420	\$7 995 710	\$859 715	\$294 747	\$294 010	\$1 448 472	\$10 156 913	\$8 933 683	\$4 995 813	\$24 086 408
D5 - Integrated Decision Model	\$4 537 136	\$2 216 986	\$308 623	\$7 062 746	\$7 314 933	\$1 438 180	\$3 941 457	\$12 694 571	\$5 951 671	\$600 221	\$1 849 568	\$8 401 460	\$17 803 741	\$4 255 387	\$6 099 649	\$28 158 777
D6 - Reports	\$742 753	\$1 743 424	\$958 482	\$3 444 659	\$1 114 692	\$2 291 009	\$1 088 363	\$4 494 064	\$1 168 851	\$1 703 929	\$732 687	\$3 605 468	\$3 026 296	\$5 738 363	\$2 779 532	\$11 544 191
Prep. Security, Privacy & Service Agreements	\$544 973	\$918 901	\$104 410	\$1 568 284	\$32 866	\$258 300	\$16 457	\$307 623	\$0	\$275 000	\$288 750	\$577 839	\$1 452 201	\$134 617	\$2 164 658	\$2 164 658
Integration	\$632 855	\$2 253 293	\$173 227	\$3 059 375	\$699 905	\$1 908 600	\$162 675	\$2 771 180	\$721 955	\$1 843 200	\$161 603	\$2 726 758	\$2 054 715	\$6 005 093	\$497 506	\$8 557 314
Bridging TAs Q1 FY 14/15	\$4 210 591	\$4 229 076	\$0	\$8 439 667	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4 210 591	\$4 229 076	\$0	\$8 439 667
Management & Support	\$1 571 302	\$924 000	\$233 839	\$2 729 141	\$1 645 395	\$924 000	\$243 109	\$2 812 504	\$1 366 737	\$924 000	\$216 099	\$2 506 856	\$4 583 454	\$2 772 000	\$693 047	\$8 048 501
Development SubTOTAL	\$22 084 719	\$23 545 474	\$8 331 728	\$53 961 922	\$15 755 322	\$11 189 298	\$8 292 869	\$35 237 489	\$10 578 345	\$5 859 119	\$3 922 474	\$20 359 938	\$48 418 387	\$40 593 891	\$20 547 072	\$109 559 350
EBP (20% of FTE \$)			\$4 416 944	\$4 416 944			\$9 151 064	\$3 151 064			\$2 115 669	\$2 115 669			\$9 683 677	\$9 683 677
eManifest Development TOTAL	\$22 084 719	\$23 545 474	\$12 748 672	\$58 378 866	\$15 755 322	\$11 189 298	\$11 443 934	\$38 388 554	\$10 578 345	\$5 859 119	\$6 038 143	\$22 475 607	\$48 418 387	\$40 593 891	\$30 230 749	\$119 243 027

Maintenance Costs	2014/15				2015/16				2016/17				Total			
	FTE	Consultant	Other O&M	TOTAL	FTE	Consultant	Other O&M	TOTAL	FTE	Consultant	Other O&M	TOTAL	FTE	Consultant	Other O&M	TOTAL
2013/14 costs	\$0	\$0	\$14 651 916	\$14 651 916	\$0	\$0	\$14 651 916	\$14 651 916	\$0	\$0	\$14 651 916	\$14 651 916	\$0	\$0	\$14 651 916	\$14 651 916
Address Verification	\$0	\$0	\$1 854 000	\$1 854 000	\$0	\$0	\$2 500 000	\$2 500 000	\$0	\$0	\$2 500 000	\$2 500 000	\$0	\$0	\$6 854 000	\$6 854 000
Programs Branch	\$3 521 742	\$0	\$0	\$3 521 742	\$3 521 742	\$0	\$0	\$3 521 742	\$3 521 742	\$0	\$0	\$3 521 742	\$10 565 225	\$0	\$0	\$10 565 225
Operations Branch	\$3 044 842	\$0	\$16 000	\$3 060 842	\$3 406 207	\$0	\$26 000	\$3 432 207	\$5 995 030	\$0	\$116 000	\$6 111 030	\$12 446 079	\$0	\$158 000	\$12 604 079
Corporate Overhead	\$1 188 329	\$0	\$2 281 726	\$3 470 055	\$1 018 551	\$0	\$2 369 646	\$3 388 197	\$1 018 551	\$0	\$2 287 788	\$3 306 339	\$3 225 431	\$0	\$6 939 160	\$10 164 591
Major Projects Activities	\$2 340 928	\$99 000	\$384 500	\$2 824 428	\$1 193 322	\$386 000	\$384 500	\$1 973 822	\$1 901 812	\$0	\$384 500	\$575 312	\$3 725 062	\$495 000	\$1 153 500	\$5 373 562
BASD Activities	\$1 214 856	\$623 700	\$0	\$1 838 556	\$1 484 265	\$558 900	\$29 070	\$2 072 235	\$3 273 890	\$257 200	\$97 500	\$3 628 590	\$5 973 011	\$1 439 800	\$126 570	\$7 539 381
ESD Activities	\$9 913 771	\$2 118 799	\$10 251 005	\$16 283 575	\$3 445 844	\$1 366 800	\$5 643 479	\$10 456 123	\$3 604 603	\$1 391 920	\$6 420 175	\$11 416 698	\$10 964 218	\$4 877 519	\$22 314 659	\$38 156 395
Science & Engineering Activities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M costs	\$0	\$0	\$444 329	\$444 329	\$0	\$0	\$363 033	\$363 033	\$0	\$0	\$449 252	\$449 252	\$0	\$0	\$0	\$0
Increased Maintenance for Deployments	\$0	\$0	\$0	\$0	\$533 412	\$664 289	\$500 696	\$1 698 397	\$4 904 880	\$1 924 601	\$1 941 842	\$8 771 323	\$5 438 292	\$2 588 890	\$2 442 538	\$10 469 719
SSC Costing	\$0	\$2 575 390	\$2 079 720	\$4 655 110	\$0	\$2 550 000	\$1 441 022	\$3 991 022	\$0	\$0	\$0	\$0	\$0	\$5 125 390	\$3 520 742	\$8 646 132
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
eManifest Maintenance TOTAL	\$15 224 467	\$5 416 889	\$31 963 196	\$52 604 552	\$14 603 342	\$5 535 989	\$27 909 362	\$48 048 693	\$22 509 508	\$3 573 721	\$28 848 973	\$54 932 202	\$52 337 317	\$14 526 599	\$88 721 530	\$155 585 447
EBP (20% of FTE \$)			\$2 807 228	\$2 807 228			\$2 716 958	\$2 716 958			\$4 298 191	\$4 298 191			\$9 822 377	\$9 822 377
eManifest Maintenance TOTAL	\$15 224 467	\$5 416 889	\$34 770 423	\$55 411 779	\$14 603 342	\$5 535 989	\$30 626 320	\$50 765 651	\$22 509 508	\$3 573 721	\$33 147 164	\$59 230 394	\$52 337 317	\$14 526 599	\$98 543 908	\$165 407 824
TOTAL eMANIFEST	\$37 309 187	\$28 962 363	\$47 519 095	\$113 790 645	\$30 358 664	\$16 725 287	\$42 070 254	\$89 154 205	\$33 087 853	\$9 432 840	\$39 185 308	\$81 706 001	\$100 755 704	\$55 120 490	\$128 774 657	\$284 650 851

Development Accommodations (13% of FTE \$)**			\$2 871 014	\$2 871 014			\$2 048 192	\$2 048 192			\$1 375 185	\$1 375 185			\$6 294 390	\$6 294 390
Maintenance Accommodations (13% of FTE \$)**			\$1 979 181	\$1 979 181			\$1 898 434	\$1 898 434			\$2 926 236	\$2 926 236			\$6 803 851	\$6 803 851

Project's Cost Base (version 40)

PROTECTION • SERVICE • INTEGRITY



Budget per Deployment

as of March 31, 2015 using Approved Project Cost Base (Version 40)

Deployment (Sub-Deployments)	Budget	Completed on Time and on Budget
Deployment 1	\$10.3M	✓
<u>Sub-Total (Prior to FY2014-15)</u>	<u>\$10.3M</u>	
Deployment 2 (2A)	\$1.1M	✓
Deployment 2 (2B & 2C)	\$3.4M	Ongoing
Deployment 3	\$21.8M	✓
Deployment 4	\$34.9M	Ongoing
Deployment 5	\$42.4M	Ongoing
Deployment 6 (6A & 6B)	\$16.3M	Ongoing
<u>Sub-Total (FY2014-15 onwards)</u>	<u>\$119.9M</u>	
<u>Total for All Deployments</u>	<u>\$130.2M</u>	



eManifest Regulations Update

- eManifest regulatory package 1 includes advance commercial information requirements for carriers in the highway and rail modes, mandatory electronic warehouse arrivals, requirements for freight forwarders in all modes and bay plan requirements in the marine mode.

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Stakeholder Engagement

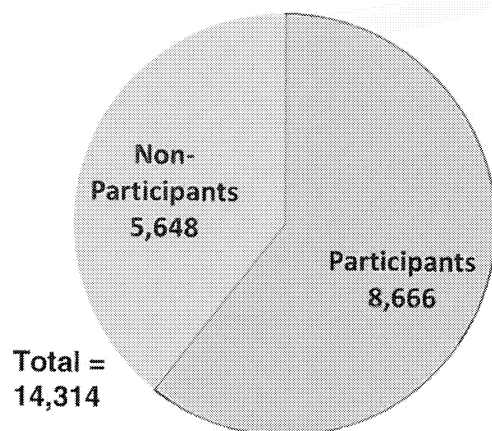
- To ensure successful implementation throughout all deployments, the CBSA conducts outreach activities and maintains open lines of communication with external stakeholders.
- This enables the Agency and stakeholders to identify and address any potential process or technical issues related to implementation.



Client Uptake

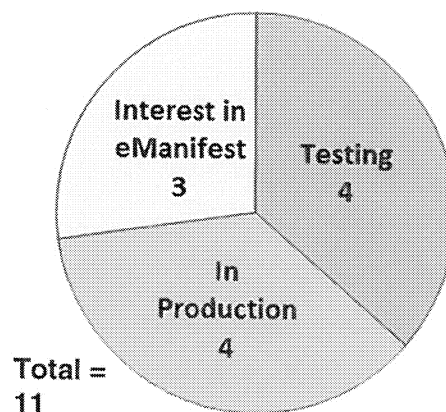
Highway Carriers

- There are 14,314 active highway carriers through FY 14-15.
- Of the active highway carriers, 8,666 are EDI in production, EDI in testing and/or active, pending inactive or suspended in the eManifest Portal.
- The 8,666 carriers, represent 96% of all highway volumes, both electronic and paper, currently through FY14-15.



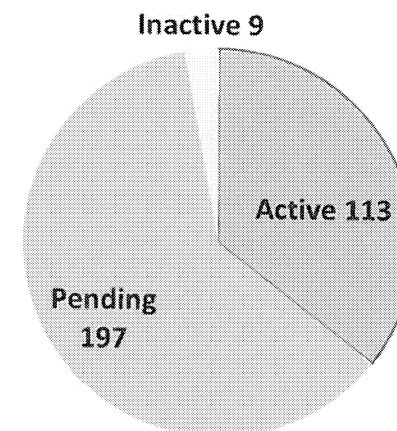
Rail Carriers

- 11 rail carriers currently represent 100% of all rail volumes, both electronic and paper, through FY14-15.
- As of February 2015, eight of the 11 carriers are in production or are in testing eManifest.



Freight Forwarders

- There are 992 total registered freight forwarder codes as of February 28, 2015.
- 319 freight forwarders are engaged in EDI or eManifest Portal registrations.



NB: Pending means in testing or an access request has been made..



Appendix



Deployment 2

"Data Analytics"

Scope

- Data Analytics capability to assist intelligence officers / targeting teams in the National Targeting Centre (NTC) in the mining of the existing and historical trade data

Business Outcomes

-
-
- Modification of existing indicators based on analysis / outcomes and new data feeds

Target Production Date:

- ✓ Deployment 2A: Implemented in Production - October 2014
- Deployment 2B: June 2015
- Deployment 2C: February 2016



Deployment 3

“Commodity Risk Assessment”

Scope

- Start of Automated Risk Assessment
- Introduction of the risk results User Interface (UI) that supports the viewing of shipments
- Provide the ability to view and modify High Risk Commodity rules
- Implementation of High Risk Commodity rules to support Automated Risk Assessment of shipments

Business Outcomes

- Capability for the NTC to view High Risk Commodity risk results (Real Time) in all modes;
- Supports the ability to target or interdict high risk shipments using legacy commercial systems
- Ability for the Program to assess the performance of High Risk Commodity rules in new system vs. legacy system
- Validating and improving the Automated Risk Assessment results

Target Production Date:

✓ March, 2015



Deployment 4

"End-State Risk Assessment"

Scope

- Complete Automated Risk Assessment (all risk rules are executing and viewable)
- Implementation of initial eManifest new notices for Trade Chain Partners (TCPs)
- Implementation of the Single Window trade document (Integrated Import Declaration) as a release option
- Resolved identities of TCPs using Master Data Management
- Implementation of a risk rules simulation environment

Business Outcomes

- Capability for the NTC to view targets and all risk results (Real Time) in all modes
- Capability to assess the operational impact of implementing new risk rules (using simulation)
- The new notices provide desirable functionality to help improve communication between CBSA and its clients as well as business-to-business communication.
- Validation of the Risk Assessment Model (identification of low and high risk entities)
- Validation that the planned targeting work force can handle the volume

Target Production Date: December 2015



Deployment 5

"Integrated Decision Model"

Scope

- Integrated decisions and referrals (Risk Assessment, Passage and Single Window Initiative)
- Capture of examination results by front line operations
- End-state notices via Electronic Data Interchange and eManifest Portal
- Introduction of Advance Trade Data (ATD) from Importers
- Implementation of end state eManifest trade document submission

Business Outcomes

- Complete integration of risk assessment and passage decisions between NTC and field operations Border Services Officers (BSOs)
- Enhance Program integrity through "closing the loop" on examination results
- Advance Trade Data (ATD) in all modes supports Targeting Program – provides clarity on what commodities are being imported by whom
- Fully integrated commercial processing system and application, includes SWI
- New Documents and Notices available to external clients
- The eManifest system becomes the new system of record
- Full Benefits Realized for TCPs (Manifest Forward, Streamlined Border Processing)

Target Production Date: December 2016



Deployment 6

“Operational and Performance Reports”

Scope

- Risk Assessment: Operational and Management Reports
- Passage: Operational and Management Reports

Business Outcomes

- Program Performance and Operational Reporting
- Increased Decision Support for Programs

Target Production Date:

- Deployment 6A (aligns with D4 production): December 2015
- Deployment 6B (aligns with D5 Production): December 2016



Canada Border
Services Agency

Agence des services
frontaliers du Canada



eManifest Project Update

External Audit Committee Briefing

December 2015

Commercial Projects Directorate, ISTB

PROTECTION

SERVICE

INTEGRITY



SERVICE

PROTECTION

INTÉGRITÉ

PROTECTION • SERVICE • INTEGRITY

Canada

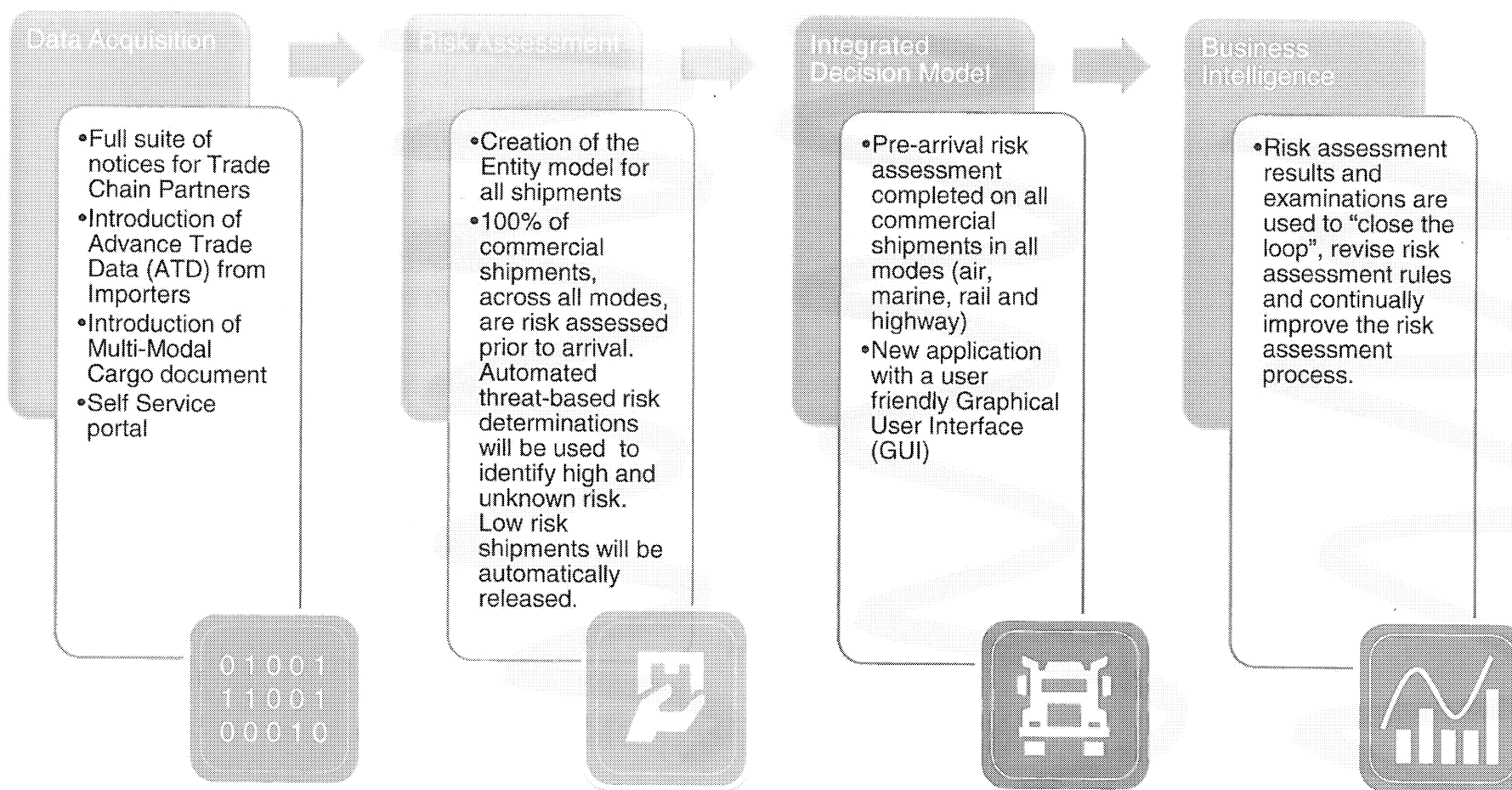


Presentation Overview

- eManifest End State Overview
- eManifest Benefits
- Project Update & Upcoming Activities
 - Deployment 2B (Data Analytics)
 - Deployment 4A (Notices)
 - Deployment 4B (Risk Assessment Program Maintenance)
- Implementation Strategy
- eManifest Regulations Update
- Baseline Costing



eManifest End State functionality in December 2016





eManifest Benefits

For Trade

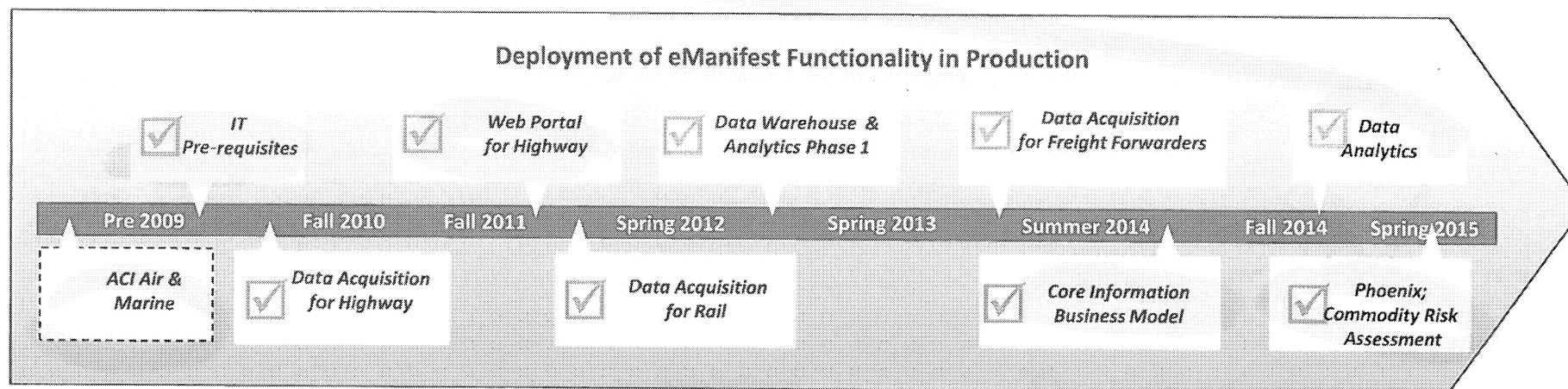
1. All Trade Chain Partners electronically transmit advance commercial information, which can be used in communication with other trade chain partners .
2. Risk assessment prior to arrival provides consistency to trade.
3. Standardization of the commercial process with the expansion of automated risk assessment to all modes.
4. Focus on high risk shipments for targeting and inspection facilitates the legitimate flow of low-risk trade.
5. Ability to cleanse data reduces costly Requests for Information (RFI) to the Trade.

For CBSA

1. Data Acquisition - All trade chain partners transmit data electronically prior to arrival from all modes.
2. Entity Model – Pre-arrival trade data from multiple documents is compiled into “entities” that provide a complete view of the shipment, conveyance, and equipment. Risk assessment happens at the entity level rather than on individual trade documents.
3. Automated Risk Assessment - Commercial entities, across all modes, are risk assessed prior to arrival. Threat-based risk determinations will be used to flag high and unknown risk entities to the targeting officers. Low risk shipments will be authorized to move inland or released by the system.
4. Integrated Targeting Model – Risk assessment for admissibility and release decisions in all four modes is done by targeting officers at the National Targeting Centre.
5. Business Intelligence – Risk assessment results and examinations are used to “close the loop”, revise risk assessment rules and continually improve the risk assessment process.



eManifest Accomplishments to Date



Systems Deployed:

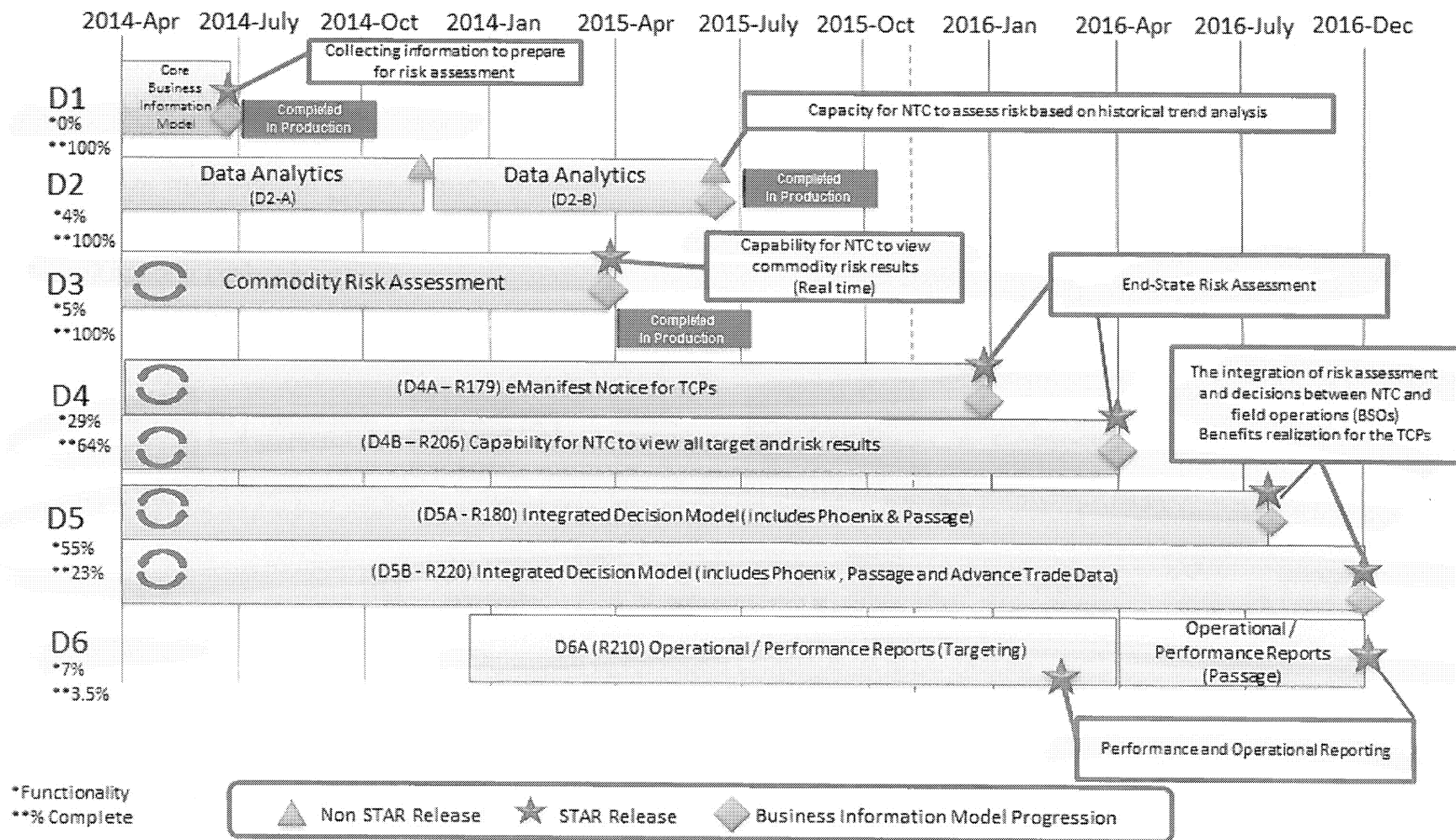
- ✓ eManifest Portal
- ✓ Air and Marine Conveyance Arrivals
- ✓ Manifest Forward
- ✓ Data Warehouse
- ✓ Core Information Business Model
- ✓ Data Analytics
- ✓ Phoenix

Reporting:

- ✓ Highway Reporting
- ✓ Rail Reporting
- ✓ Freight Forwarder Reporting



Delivery Approach





Deployment 2 – Data Analytics

- The business case for D2 has been achieved with the successful completion of two releases:
 - D2A: The project implemented a subset of the Commercial Mining Mart on the new Enterprise Data Warehouse (EDW) Appliance with supporting data analytics to demonstrate the business value of moving to a 24 hour refresh rate. Production Date: October 22, 2014.
 - D2B: The project augmented the 24 hour refresh of the D2A data sources with Business Information Model (BIM) and Commodity Risk Results data sources. Production Date: June 29, 2015.
- Data Analytics now forms part of the National Targeting Centre (NTC) approach to targeting high risk shipments and continues to evolve and expand analytical capabilities.



Deployment 3

Commodity Risk Assessment

- D3 was successfully implemented in March 2015.
- This was the start of Automated Risk Assessment and introduced the risk results User Interface (UI) that supports the viewing of shipments.
- D3 provided the ability to view and modify High Risk Commodity rules and the capability for the NTC to view High Risk Commodity risk results (Real Time) in all modes.
- In addition, it supports the ability to target or interdict high risk shipments using legacy commercial systems and allows the Program to assess the performance of High Risk Commodity rules in new system vs. legacy system, validating and improving the Automated Risk Assessment results.



Deployment 4A – Notices

In January 2016, the CBSA will introduce new and enhanced notification systems to increase automation of pre-and post-arrival notices to clients on commercial movements.

- The new eManifest notices were designed through consultations with external stakeholders and will provide insight into the “disposition” of their shipments.
- New eManifest notices will advise on the completeness of advance data submitted to the CBSA and on the arrival and release statuses of shipments.
- The notices align with the message that stakeholders receive from US CBP.



Deployment 4B

Risk Assessment Program Maintenance (RAPM)

- Replaces existing targeting functionality in ACROSS (legacy system), scheduled for production in April 2016.
- - Commercial Analysts create medium-complexity targets on behalf of other government departments
 - Intel and Targeting Operations create complex targets
- Intuitive wizard walks users step-by-step through the target creation process.
- 500+ targetable elements and flexible operators enable creation of virtually any rule imaginable.
- Library of standardized, pre-translated examination instructions ensures consistent communications between target creator and Targeting Officers/BSOs.
-
- Ability to set target deactivation rules to avoid negative impact on Operations.



Deployment 5

Integrated Decision Model

- Complete integration of risk assessment and passage decisions between NTC and field operations Border Services Officers (BSOs).
- Enhanced Program integrity through “closing the loop” on examination results.
- Advance Trade Data (ATD) in all modes supports Targeting Program, provides clarity on what commodities are being imported by whom.
- Fully integrated commercial processing system and application, includes Single Window Initiative.
- New Documents and Notices available to external clients.
- The eManifest system becomes the new system of record.
- Deployment 5A is scheduled for production in August 2016 and Deployment 5B for December 2016.



Deployment 6

Operational and Performance Reports

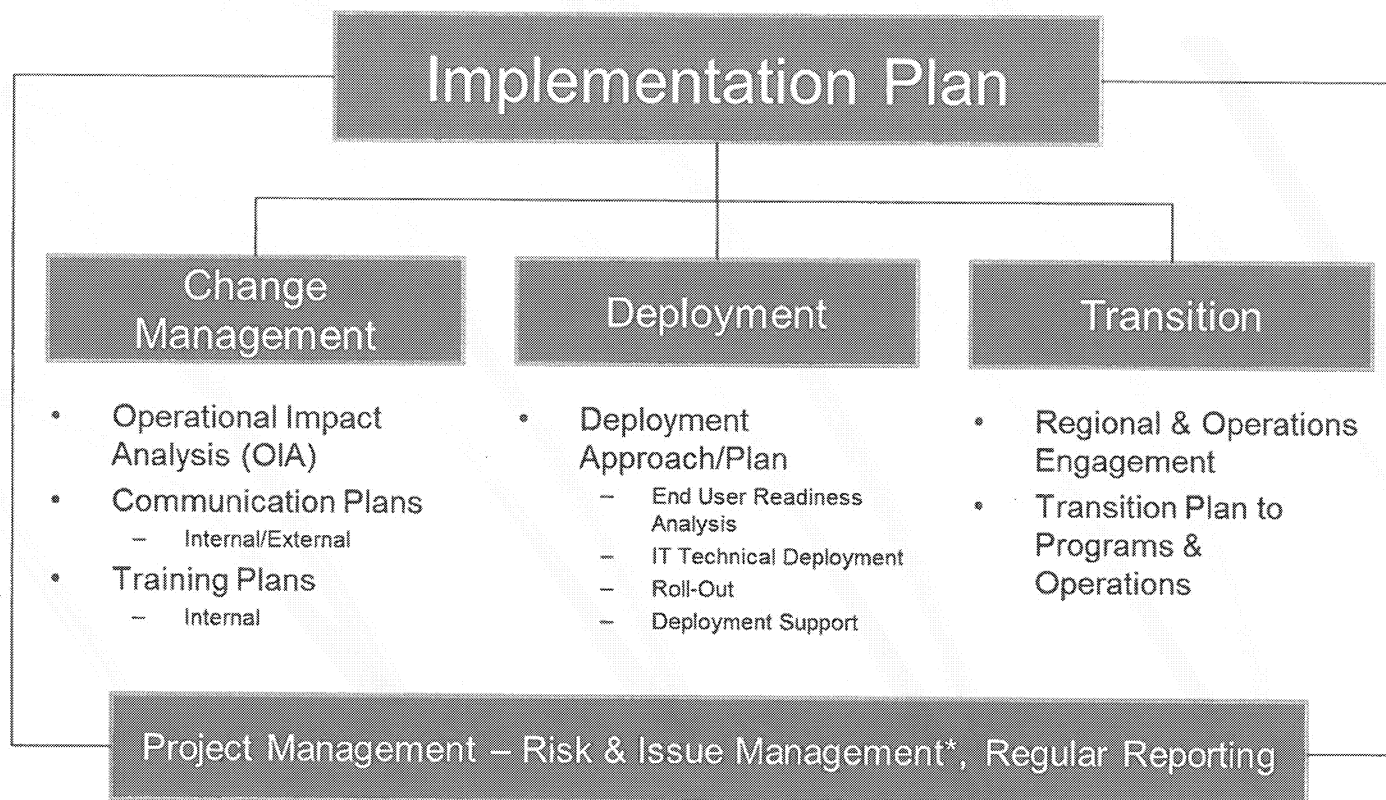
- The scope of D6A is to provide Risk Assessment: Operational and Management Reports.
- The scope of D6B is to provide Passage: Operational and Management Reports.
- This will allow for Program Performance and Operational Reporting and increased Decision Support for Programs.

Target Production Date:

- Deployment 6A (aligns with D4B production): April 2016
- Deployment 6B (aligns with D5B Production): December 2016



Implementation Strategy





eManifest Regulations Update

- From July 10, 2015, to January 10, 2016, carriers who do not comply with eManifest requirements may be issued zero-rated penalties (non-monetary) under the CBSA's Administrative Monetary Penalty System (AMPS).
- Beginning January 11, 2016, carriers who do not comply with eManifest requirements may be issued monetary AMPS penalties and will experience processing delays.
- Freight Forwarders continue to be in a voluntary compliance period. Once 4A is in production and all system functions are available to electronically process consolidated imports, regulations will be enforced.
- The Agency is working closely with carriers and freight forwarders on corrective measures to help them comply with eManifest requirements.



Budget per Deployment

as of March 31, 2015 using Approved Project Cost Base (Version 40)

Deployment (Sub-Deployments)	Budget	Completed on Time and on Budget	Earned Value
Deployment 1	\$10.3M	✓	100%
<u>Sub-Total (Prior to FY2014-15)</u>	<u>\$10.3M</u>		
Deployment 2 (2A)	\$1.1M	✓	100%
Deployment 2 (2B)	\$3.4M	✓	100%
Deployment 3	\$21.8M	✓	100%
Deployment 4	\$34.9M	Ongoing	52%
Deployment 5	\$42.4M	Ongoing	34%
Deployment 6	\$16.3M	Ongoing	13%
<u>Sub-Total (FY2014-15 onwards)</u>	<u>\$119.9M</u>		
<u>Total for All Deployments</u>	<u>\$130.2M</u>		



Appendix



Deployment 2

“Data Analytics”

Scope

- Data Analytics capability to assist intelligence officers / targeting teams in the National Targeting Centre (NTC) in the mining of the existing and historical trade data

Business Outcomes

- Capability for the NTC to assess risk based on historical trend analysis (e.g. anomalies in a companies Business Profile – pattern and trend deviation)
- Identification of ‘candidate’ risk indicators (e.g. use analytics to develop new rules based on vessel routing patterns, container delivery address)
- Modification of existing indicators based on analysis / outcomes and new data feeds

Target Production Date:

- ✓ Deployment 2A: Implemented in Production - October 2014
- ✓ Deployment 2B: June 2015



Deployment 3

“Commodity Risk Assessment”

Scope

- Start of Automated Risk Assessment
- Introduction of the risk results User Interface (UI) that supports the viewing of shipments
- Provide the ability to view and modify High Risk Commodity rules
- Implementation of High Risk Commodity rules to support Automated Risk Assessment of shipments

Business Outcomes

- Capability for the NTC to view High Risk Commodity risk results (Real Time) in all modes;
- Supports the ability to target or interdict high risk shipments using legacy commercial systems
- Ability for the Program to assess the performance of High Risk Commodity rules in new system vs. legacy system
- Validating and improving the Automated Risk Assessment results

Target Production Date:

✓ March 2015



Deployment 4

"End-State Risk Assessment"

Scope

- Complete Automated Risk Assessment (all risk rules are executing and viewable)
- Implementation of initial eManifest new notices for Trade Chain Partners (TCPs)
- Implementation of the Single Window trade document (Integrated Import Declaration) as a release option
- Resolved identities of TCPs using Master Data Management
- Implementation of a risk rules simulation environment

Business Outcomes

- Capability for the NTC to view targets and all risk results (Real Time) in all modes
- Capability to assess the operational impact of implementing new risk rules (using simulation)
- The new notices provide desirable functionality to help improve communication between CBSA and its clients as well as business-to-business communication.
- Validation of the Risk Assessment Model (identification of low and high risk entities)
- Validation that the planned targeting work force can handle the volume

D4A Target Production Date: January 16-17, 2016

D4B Target Production Date: April 2-3, 2016



Deployment 5

"Integrated Decision Model"

Scope

- Integrated decisions and referrals (Risk Assessment, Passage and Single Window Initiative)
- Capture of examination results by front line operations
- End-state notices via Electronic Data Interchange and eManifest Portal
- Introduction of Advance Trade Data (ATD) from Importers
- Implementation of end state eManifest trade document submission

Business Outcomes

- Complete integration of risk assessment and passage decisions between NTC and field operations Border Services Officers (BSOs)
- Enhance Program integrity through "closing the loop" on examination results
- Advance Trade Data (ATD) in all modes supports Targeting Program – provides clarity on what commodities are being imported by whom
- Fully integrated commercial processing system and application, includes SWI
- New Documents and Notices available to external clients
- The eManifest system becomes the new system of record
- Full Benefits Realized for TCPs (Manifest Forward, Streamlined Border Processing)

D5A Target Production Date: August 2016

D5B Target Production Date: December 2016



Deployment 6

“Operational and Performance Reports”

Scope

- Risk Assessment: Operational and Management Reports
- Passage: Operational and Management Reports

Business Outcomes

- Program Performance and Operational Reporting
- Increased Decision Support for Programs

Target Production Date:

- Deployment 6A (aligns with D4B production): April 2016
- Deployment 6B (aligns with D5B Production): December 2016



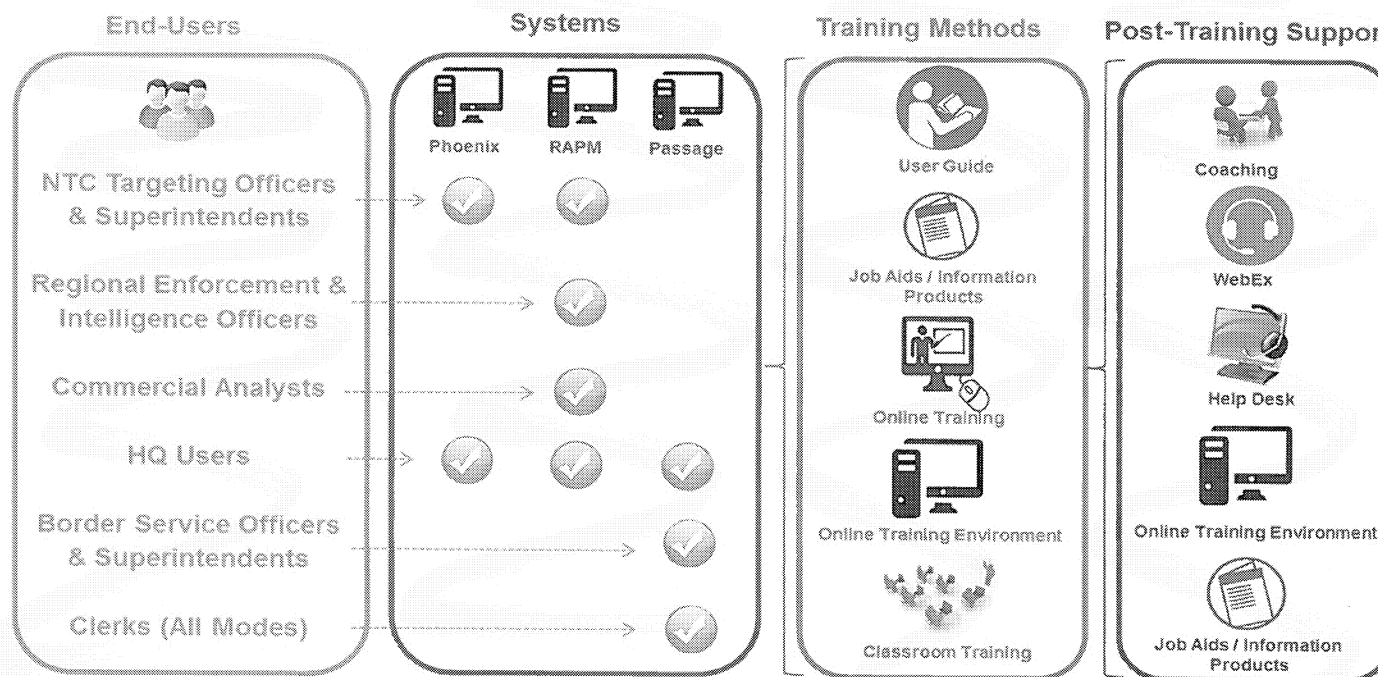
Change Management

- Recognize that end state will drive fundamental change to the CBSA commercial business model, specifically the commercial risk assessment process. Strong change management will ensure that the people, organization and cultural impacts are addressed in a structured and proactive manner.
- The eManifest Stakeholder Engagement and Communications Strategy guides continuing project communications to internal and external stakeholders.
- The external strategy is targeted for each trade group and focuses on the different set of functions available within a release.
- The end state will have more impacts on the internal stakeholders, as such, an internal communication strategy will be developed to include key messages for the different end users within CBSA.



Training

- Strategy and training modules for end state model being developed in consultation with Programs and Operations Branches. Delivery of training will be dependant on deployment option selected.
- Training strategy includes the transition of the training into the core BSO Commercial Training program.





Deployment and Transition

- 6 deployment options were identified, each of which was evaluated using 12 criteria with the goal of understanding the relative risks and benefits of each option.
- Based on the initial review, 3 options were shortlisted for detailed analysis:
 - Implementation across all Commercial End Users and Trade
 - Phased approach to Internal end users, then External stakeholders
 - Phased approach with PIL deployed by port or region
- Recommendation will be presented at executive level for endorsement.
- Transition from Project to Operation and Programs is happening as new “capabilities” are made available.
 - The Data Analytics team moved to the National Targeting Centre (NTC) in April 2015.
 - Funding and Resources necessary to support the maintenance of automated risk tools was transitioned to the NTC in September 2015.



Canada Border
Services Agency

Agence des services
frontaliers du Canada



eManifest Project Update

November 28, 2014

*Briefing to the Senior Project Advisory
Committee by the Commercial Projects
Directorate*



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Canada

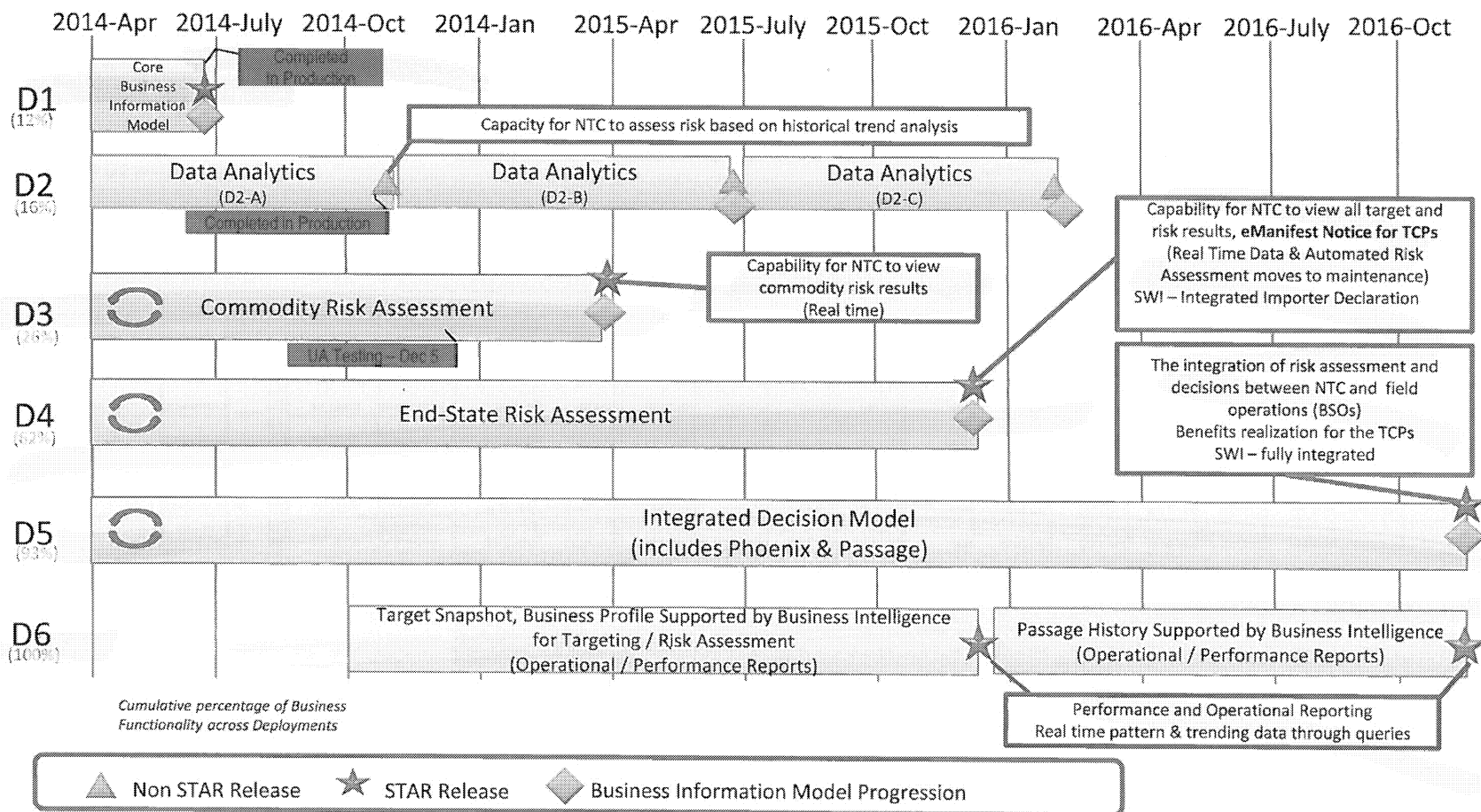


Project Update

- Ongoing Project Oversight and Support activities including;
 - Working with Comptrollership and TB for briefing scheduled December 11th.
 - Monthly reporting to TBS on Executive Dashboard and monthly reporting of Earned Value to Enterprise Project Management Office.
 - Working with Comptrollership and PWGSC on amendments to existing supply arrangements to cover project timelines.
 - Review of Third Party assessment of eManifest project Governance structure.



Project Deployment Update





Deployment 2 Business Solutions

Directed Queries

Identification of shipments of interests based on Intelligence received from the National Targeting Centre (NTC).

Business Profiles

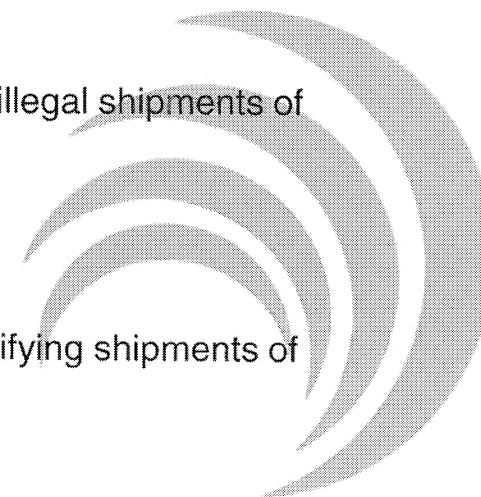
Analytical tools that seek business pattern deviations based on known characteristics of a companies importing history.

Precursor Chemicals

Analytical tool to assist targeting operations in identifying illegal shipments of precursor chemicals.

Rail Targeting

Assesses pre-arrival commercial data and assists in identifying shipments of interest in the rail environment.





Deployment 3

"Commodity Risk Assessment"

Scope

- Start of Automated Risk Assessment; Business Rule Authoring using new rules engine
- Introduction of the risk results User Interface (UI) that supports the viewing of shipments
- Provide the ability to view and modify High Risk Commodity rules
- Implementation of High Risk Commodity rules; e.g. Chemical Weapon Pre-Cursors, Dual Use Commodities, High Risk Goods for Contraband Concealment, Animal and Plant Pathogens, Bio-Toxins.

Business Outcomes

- Capability for the National Targeting Centre to view High Risk Commodity risk results (Real Time) in all modes;
- Supports the ability to target or interdict high risk shipments using legacy commercial systems
- Ability for the Operations to assess the performance of High Risk Commodity rules in new system vs. legacy system
- Validating and improving the Automated Risk Assessment results
- **Target Production Date:** March 2015



Upcoming Activities

- Finalize work on TBS Ministers briefing.
- Finalize Supply Arrangement amendments for professional services.
- Border Commercial Consultative Committee meeting December 5th
- Initiate User Acceptance Testing of Deployment 3.
- Showcase Deployment 3 functionality to Project Sponsors in January 2015.

Walton, Carole

From: Allison, Melanie
Sent: May 13, 2016 10:56 AM
To: Popova, Diana; Laplante, Francois; Custance, Carla; Fisher, Melanie; Paquette, Isabelle; Beiersdorfer, Barbara; Stewart, Nancy (CBSA); Lane, June
Subject: FW: E-manifest stories

Very good email that describes the targeting benefits that eManifest has brought to date for the Agency.

From: Mosca, Matt
Sent: May 9, 2016 2:52 PM
To: Allison, Melanie; Bratanic, Margarita; Hotchkiss, David; Breakwell, Candace-Ann; Rice, Geoff; Uchman, Darren; Laquerre, Brenda
Subject: FW: E-manifest stories

Hey all – as discussed at PID this am, below are some beneficial eMan stories

Thanks,

Matt Mosca

A/Junior Program Officer
Information, Science and Technology Branch
Canada Border Services Agency / Government of Canada
Matt.Mosca@cbsa-asfc.gc.ca / Tel: 343-291-6181 / TTY: 866-335-3237

Agent subalterne de programme p.i.
Direction générale de l'information, des sciences et de la technologie
Agence des services frontaliers du Canada / Gouvernement du Canada
Matt.Mosca@cbsa-asfc.gc.ca / Tél: 343-291-6181 / ATS: 866-335-3237

From: Leahy, Mike (CBSA)
Sent: May 6, 2016 8:18 AM
To: Scotten, Michael; Soloway, Su; Clarida-Borger, Ruth
Subject: FW: E-manifest stories

Fyi

From: Imrie, Megan
Sent: Thursday, May 5, 2016 3:39 PM
To: Walker, Christine (HQ)
Cc: Blanchard, NathalieX; Porrior, Paul; Sovani, Zaina; Pinsent, John; Xavier, Caroline; Bolduc, Martin; Chénier, Maurice
Subject: E-manifest stories

Hi Christine,

As requested, please find input from Operations (thanks Paul!) and Programs in advance of the meeting with Finance. Probably more than you need, but we thought you could pick and choose the most compelling points.

E-Manifest - Analytics enhancing operational decision making:

- Enterprise Data Warehouse – eManifest has enabled an enhanced enterprise data warehouse, with 6+ years of data, providing a 24-hour refresh. This has enabled the NTC to enhance decision making through analytics in real time for Marine Cargo and Conveyance. Later this year eManifest will be providing a 1-hour refresh of data, which will enable the NTC to enhance decision making in Rail, Highway and Air.
- Supporting Risk Rule Development – The NTC is using the Enterprise Data Warehouse to conduct research and analysis in order to develop, monitor and improve Risk Indicators for Commercial. This supports targeting at the NTC and the creation and development of new risk indicators, which in turn helps in the identification of high risk goods.
- Advance Commercial Information: Prior to eManifest the Agency did not have an automated means to collect Advance Information and target in the Highway and Rail modes. The implementation of eManifest has obligated the provision of Advance Commercial Information by Highway and Rail carriers. New mandatory eManifest requirements of Conveyance Arrival Certification Message and Warehouse Arrival Certification Message now also provide the agency situational awareness on the movement of targeted goods.
 - CN and CP are in full compliance and represent 95% of rail volumes into Canada
 - Highway carriers now provide mandatory Advance Commercial Information and have a high level of compliance.
 - By bringing these two modes online, along with marine (2004) and air (2006), we are much closer towards paperless processing of the over \$1 M worth of imports that arrive into Canada each minute while better being able to identify threats to the health, safety and security of Canadians pre-arrival.
- Business Information Search – eManifest analytics has enabled the NTC to build models that allow intelligence and targeting officers to search for specific company's addresses or phone numbers in a matter of seconds. This process previously took days to execute.
- Business Profiles – The NTC analytics team has developed processes to identify normal and abnormal behavioural patterns for specific businesses operating in Canada. This stream allows the NTC to determine if shipments related to these businesses is of low, medium or high risk.
- Commodity Profiles – The NTC analytics team has developed processes to identify normal and abnormal behavioural patterns for specific commodities being imported into Canada. These streams allow the NTC to determine if imported commodities are of low, medium, or high risk.
- Predictive Analytics (Further results below) – The NTC has developed predictive models that have been operationalized at the NTC to identify high risk goods destined for Canada. Success from these processes will be incorporated into the Risk Indicators build developed for automated targeting in eManifest. One specific model resulted in the largest cocaine seizure of last fiscal year, and also led to multiple arrests. After only 6 referrals, the predictive model built by the NTC identified this specific shipment for referral, which was enabled by eManifest and the enhancement of the Enterprise Data Warehouse.
- Vessel Reporting – The NTC analytics team has developed a report that aids targeting officers in triaging their work lists. The report summarizes important data (including historical trade chain partner data, and previous exam referral data) in a way that is currently impossible in any other system and this was enabled by the eManifest project.

- Enforcement & Intelligence – The NTC analytics team works closely with the Intelligence analytics team to provide expertise on building analytical queries to create efficiencies and identify high-risk commercial entities.
- Operational Decision Management (ODM) – The ODM risk rule development and maintenance software application permits the Targeting Risk Indicators and Scenarios team has enabled the CBSA to :
 - Develop, analyse, create, build, enter, activate, monitor and maintaining commercial risk indicators to be used with the new eManifest systems and functionality being delivered.
 -

Significant CBSA Contraband Interdictions

Provided below are a number of significant interdictions identified by the CBSA National Targeting Centre (NTC) through the direct application of E-manifest enabled advanced analytics. The NTC employs data analytics software to assist in the linking and analysis of data received from various sources (domestic and international partners, past seizures, high side intelligence). This transcends into the creation of Risk Assessment Targets, Intelligence Reports, Shift Briefings, targeting projects and successful interdictions.

Air Mode

Marine Mode

From: Bolduc, Martin
Sent: May 4, 2016 5:11 PM
To: Chénier, Maurice; Walker, Christine (HQ); Xavier, Caroline; Imrie, Megan
Cc: Blanchard, NathalieX
Subject: Re: E-manifest stories

Megan who is copied will reach out to Ops

MB

De: Chénier, Maurice
Envoyé: mercredi 4 mai 2016 16:20
À: Walker, Christine (HQ); Bolduc, Martin
Objet: RE: E-manifest stories

OK – Martin : just to make sure this doesn't fall into any cracks – are you chasing down with OPS on this one?

Thanks

From: Walker, Christine (HQ)
Sent: May 4, 2016 4:19 PM
To: Chénier, Maurice; Bolduc, Martin
Subject: E-manifest stories

For the e-man tb sub I need specific examples of how e-manifest allowed us to target and find illicit goods.

I need by Friday AM - 10 stories which Michael Vandergrift could use to present to TB to show the impact of this system.

Sent from my BlackBerry 10 smartphone on the Rogers network.

6-Mar-17



eManifest Update

**Commercial Projects Directorate /
Presentation to Pacific Region
September 2015**

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PROTECTION • SERVICE • INTEGRITY

September 18, 2015 Version 2.0, Project Implementation Division

Canada

6-Mar-17



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- Benefits (Canada, Trade, CBSA)
- Accomplishments to date

eManifest Process Flow

- Data Acquisition
- Risk Assessment
- Passage
- Business Intelligence

eManifest Training

Next Steps

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6-Mar-17



eManifest

eManifest modernizes and enhances the screening of goods and commercial processes by improving the CBSA's ability to detect shipments that pose a high or unknown risk prior to their arrival and facilitating the movement of low-risk shipments.



eManifest Benefits - Canada




- All commercial information will receive an automated risk assessment to protect the health, safety and security of Canadians.
- Automating risk assessment will improve the response time for identifying and locating a real or potential threat for goods within customs control and for new pre-arrival information from the trade community.
- The risk assessment system will use business intelligence based on historical data to ensure results from prior examinations are taken into consideration.

PROTECTION • SERVICE • INTEGRITY 4

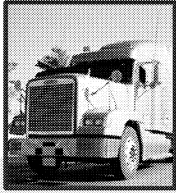
“eManifest Benefits – Canada” slide

Key messages:

- eManifest will receive the right information from the right source at the right time.
- Using this advance information up front, enables the Agency from a systems perspective, “to see the risks” .
- We can use this data to determine:
 - Who is Who?
 - Who knows Who?
 - What are the goods?
 - Is there a known risk?
- And thereafter build profiles and historically compare otherwise disparate data groupings.



eManifest Benefits - Trade




- As the new regulations require trade information to be submitted prior to arrival, trade can utilize their own data in communication with other trade chain partners (manifest forward)
- Provides uniformity and predictability for the international movement of goods.
- eManifest simplifies the submission process for cargo by streamlining the submission requirements to one multimodal option

PROTECTION • SERVICE • INTEGRITY 5


“eManifest Benefits – Trade” slide.

Key messages:

- Prior to eManifest there is no requirement for importers to provide information about the goods prior to arrival, so this information can only be used when available.
- This advance data provides more detailed information about the goods and enables greater exposure into the supply chain.
- When all trade chain partners provide data, entity relationships and linkages can be established. Trade can use their data, for example by electronically share notices and electronic documents , i.e. manifest forward in order to facilitate import movements. For example a carrier can electronically share their cargo and conveyance data with a broker who can prepare release documentation.



eManifest Benefits - CBSA



- All trade chain partners transmit data electronically prior to arrival
- Risk assessment on shipments in all modes occurs before goods arrive in Canada, targeting and examination processes are improved. Focus on high risk shipments.
- Systems designed on user needs result in more efficient and effective processing.
- Examination results are fed back into the risk assessment system.

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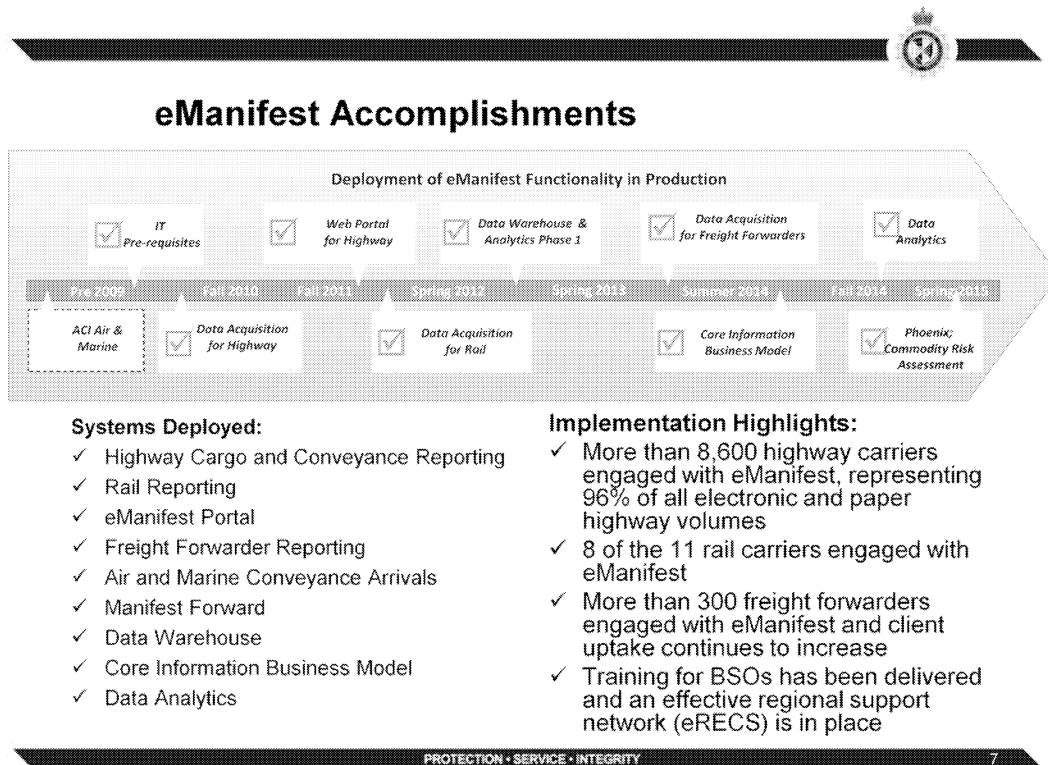
6

"eManifest Benefits – CBSA" slide

Key Messages:

- Our organization, CBSA, and our mandate, will significantly benefit from the investments that are being made as a result of eManifest, particularly in the risk assessment continuum.
- When all trade partners are transmitting, we will have predictability, we will have insight into their organizations, we will be able to analyze, learn and build the capacity of our risk assessment systems.
- We will see risks in advance.

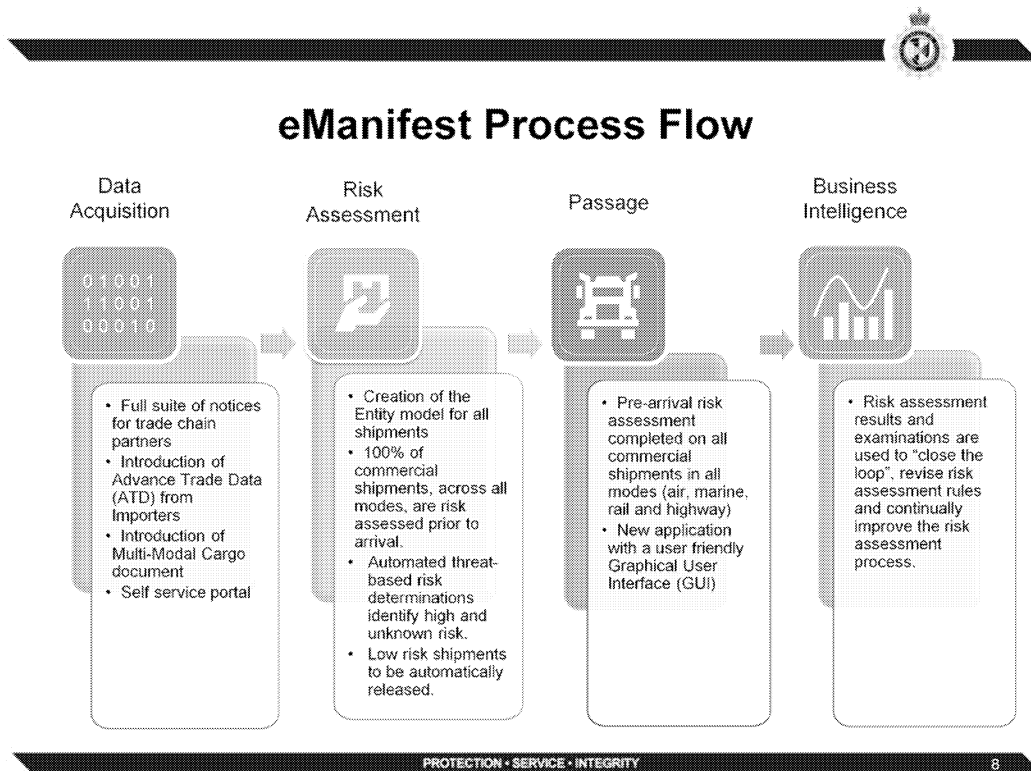
SECRET



“eManifest Accomplishments”, slide

Key messages:

- Building upon ACI - Air and Marine, the eManifest project has made significant achievements in moving the project forward.
- The focus of the project in the beginning was to engage our trade chain partners and put in place the IT infrastructure investments and pieces so that we have the ability and capacity to receive the mandated data.
- Some of the highlights include:
- Since fall of 2009 we have been able to receive data from highway carriers and to date of the 8,600 carriers who are engaged with eManifest represents approximately 96% of our highway volumes.
- During this time we also designed, developed and implemented the eManifest Portal, a free option for certain trade chain partners to use to efficiently send their cargo and conveyance data to the CBSA.
- During 2012 we worked closely with the rail community and are receiving data from the major rail carriers.
- Early in 2013, the project worked closely with the regions through the chiefs working group to implement the eManifest regional external client support (eRECS). This service has been very welcomed and appreciated by the trade community as well as within the project itself. As well we have supported the region by delivering training based on operations needs.
- More recently the project has been focused on building our data warehouse that will support the risk assessment systems being developed.

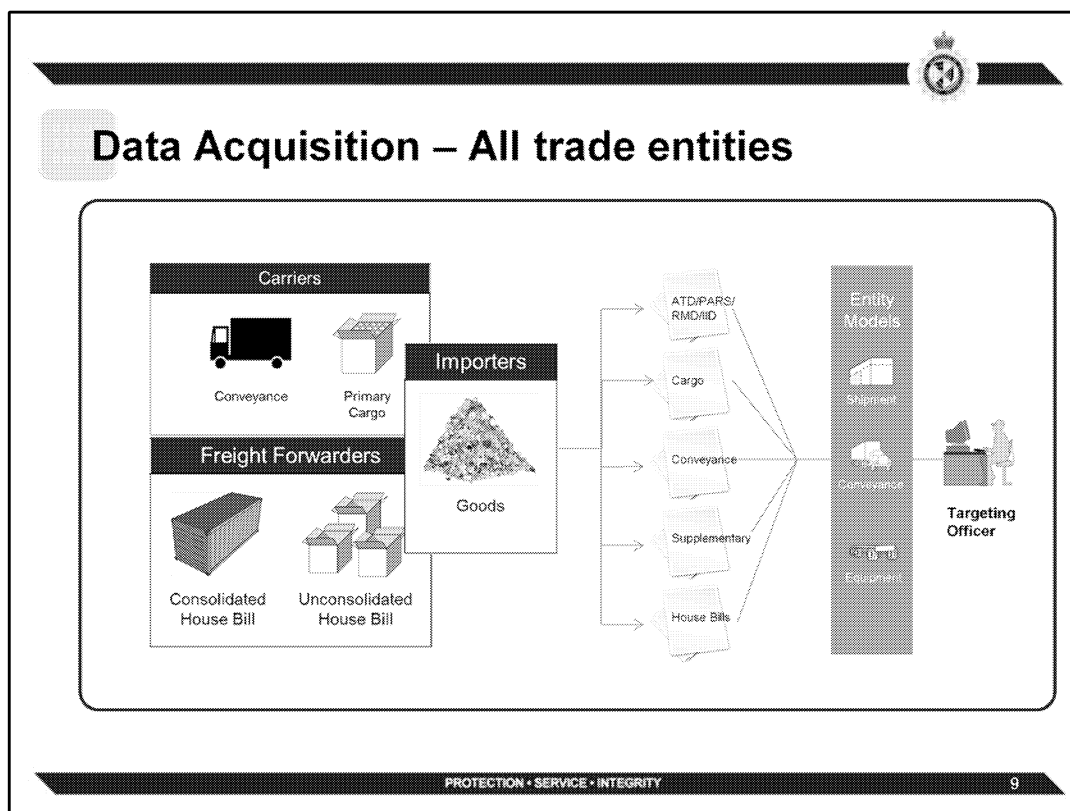


"eManifest Process Flow " slide:

Key messages:

The project has been focused on 4 primary areas, Data Acquisition, Risk Assessment, Passage, and Business Intelligence

- Full benefits realized for TCPs with electronic submissions, notifications, streamlined border processing and consistent national approach.
- Full benefits realized for internal stakeholders with an automated risk assessment process, improved commercial business process with risk assessment on all data from all modes, streamlined examination results and better tools/applications for our Targeting Officers and front line officers.
- New Commercial border processing application (Passage) that will be used by BSOs to process commercial shipments as they enter Canada
- eManifest systems becomes the new systems of record and there is full integration between the POEs and the NTC, with enhanced program integrity through "closing the loop" on examination results.



"Data Acquisition – All trade entities"

Key Messages:

- Documentation (ATD/PARS/RMD/IID, Cargo, Conveyance, Supplementary, Housebills) is received from the Trade Chain Partners (TCPs), merged into an 'entity' within the system and presented to the Targeting Officer as a holistic view of the shipment
- When data is received, cleansing tools will be used to improve the quality of data presented to the officer and will reduce costly requests for information (RFI) to the Trade. (Addresses, identities)
- Clusters of the best quality data are pulled from multiple trade documents and organized into 'entities' for risk assessment (shipment, conveyance and equipment).
- Single user can assess trade information from all TCPs (ACI data and commercial release) and make an admissibility and release decision against the 'entity.'



Threat Based Scoring (TBS)


100% of transmissions are risk assessed prior to arrival by the CBSA system

- Calculates and displays risk in each threat category individually
- TBS recognizes that different categories of risk have signatures of different sets of risk indicators
- Risk indicators are grouped into one or more threat categories
- Each threat category is scored individually

“Threat Based Scoring (TBS)” slide

Key Messages:

- Risk assessment will expand to include shipments in all modes
- Risk scoring will expand to validate conveyance, cargo, secondary cargo and admissibility release information
- Threat-based scoring will assign a numerical risk score to each shipment so high risk shipments can be flagged for review
- The creation and management of risk rules allows for greater responsiveness than the legacy process.
- Based on risk scores and categories, shipments below certain risk scoring thresholds will be automatically recommended for release
- This eliminates low risk shipments (ELR) from a mandatory review by a targeting officer



Passage - First Point of Arrival

Passage System replaces ACROSS in all modes

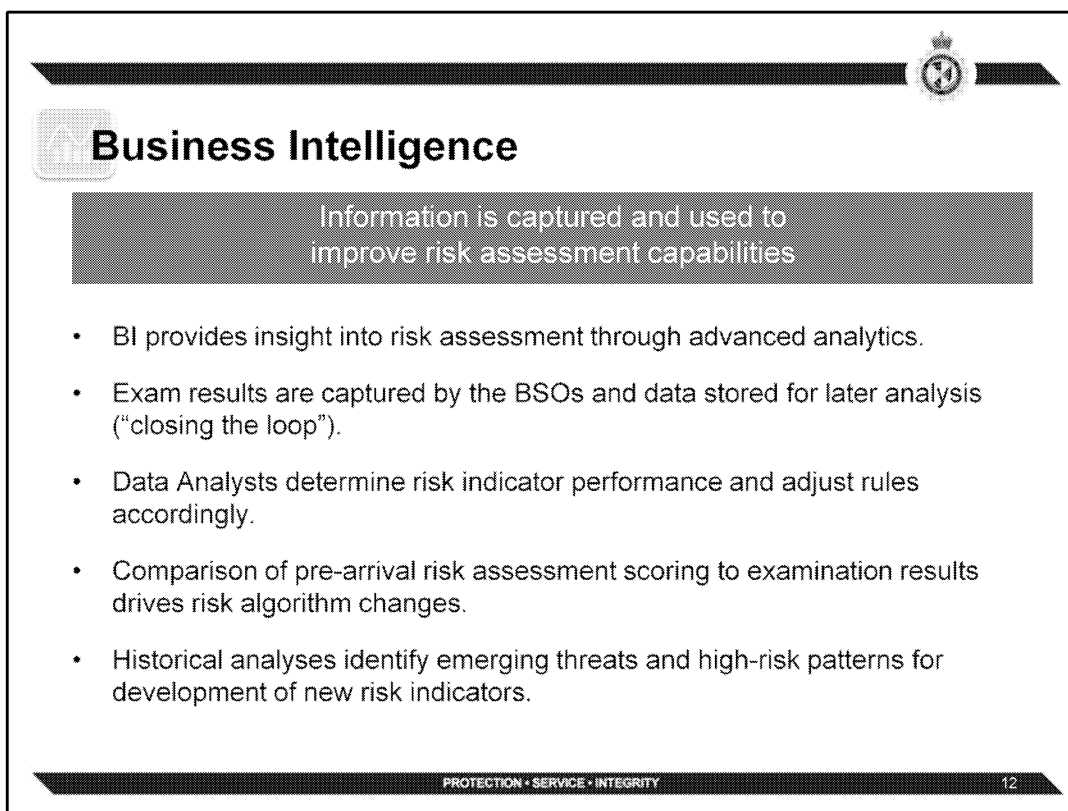
- In highway, the BSO has access to a new application with a user friendly Graphical User Interface (GUI) to review the risk assessment recommendation, the shipment entity information and make a decision to allow the goods to move or refer them for further examination.
- In other modes, carrier submits arrival message and receives notifications on whether goods are allowed to move or held for CBSA.

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“Passage – First Point of Arrival” slide

Key Messages:

The changes with the Passage system will allow the BSO to focus on their Core Mandate – Examination and evaluating high risk at the border



The slide features a header with a crest on the right. Below the header, the title "Business Intelligence" is preceded by a small house icon. A grey box contains the text "Information is captured and used to improve risk assessment capabilities". A bulleted list follows, and the footer includes the motto "PROTECTION • SERVICE • INTEGRITY" and the number "12".

Business Intelligence

Information is captured and used to improve risk assessment capabilities

- BI provides insight into risk assessment through advanced analytics.
- Exam results are captured by the BSOs and data stored for later analysis ("closing the loop").
- Data Analysts determine risk indicator performance and adjust rules accordingly.
- Comparison of pre-arrival risk assessment scoring to examination results drives risk algorithm changes.
- Historical analyses identify emerging threats and high-risk patterns for development of new risk indicators.

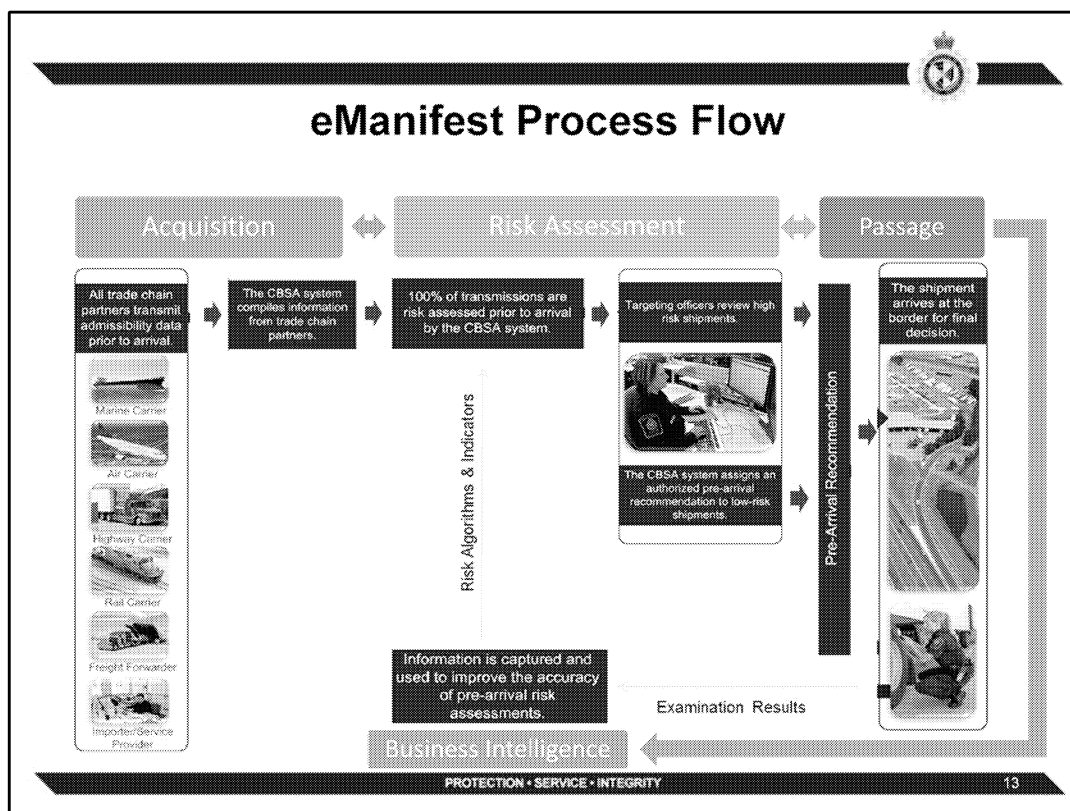
PROTECTION • SERVICE • INTEGRITY 12

"Business Intelligence" slide

Key Messages:

The Agency will experience long term dividends with the investments being made in the area of Business Intelligence.

"Closing the loop" between identifying potential risk, conducting examinations based on those risk indicators, and finally by confirming the results of those examinations will allow the Agency to improve our risk assessment capabilities.



"eManifest Process Flow" slide

This slide represents and summarizes the 4 main areas that have been described on the previous slides and visually represents the operational business flow of the data at stages before, during , and after the border.



eManifest Training

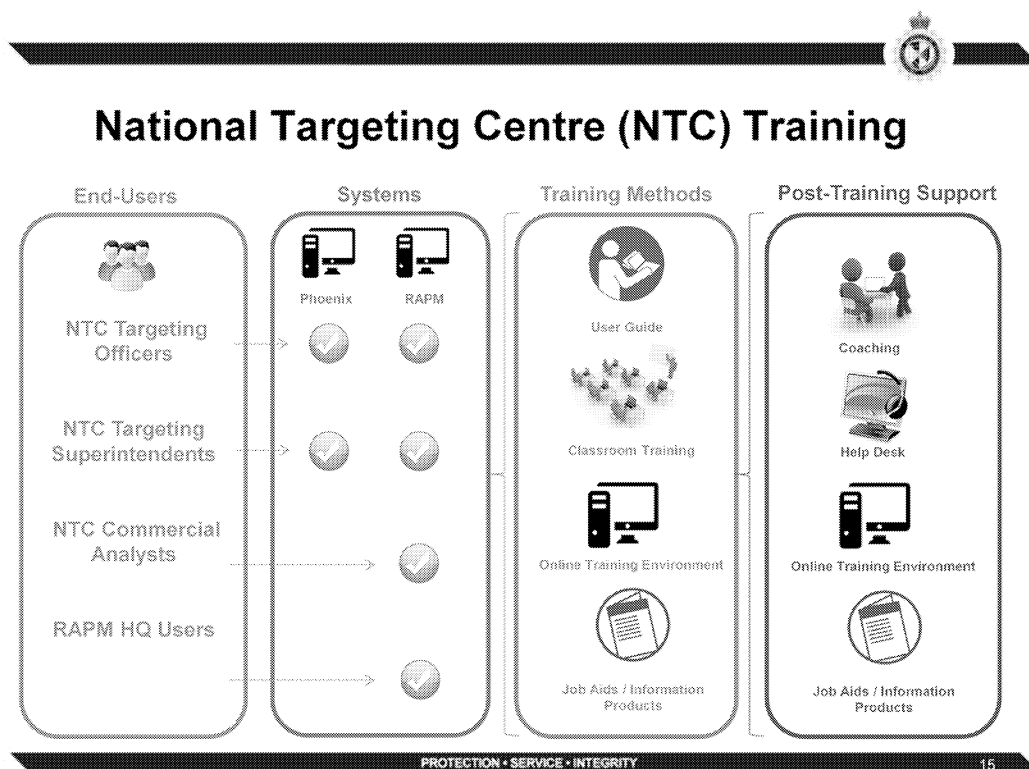
- The eManifest Training Strategy activities will ensure uniformed personnel are trained to use the new systems.
- The Commercial Projects Directorate's Project Training Unit is developing and delivering training material for impacted CBSA end-users.
- A wide range of training products and activities will be delivered according to operational impacts and the complexity of the functionality, processes, and policies involved.
- Regional eManifest resources will be used to validate and make recommendations on training products
 - Chief Working Group / eRECS / IP-SOR / Regional Programs

"eManifest Training" slide

Key Messages:

The project has and continues to work closely with Operations and Program areas to support BSOs with the knowledge of how to process eManifest shipments

- The CBSA is implementing operational training activities to help employees acquire knowledge and skills required to use the new systems and processes implemented by eManifest .
- This will be done in consultation and collaboration with the Training and Development Directorate, Commercial Operations, Commercial Programs, the Chiefs Working Group, and eRECS personnel



“National Targeting Centre (NTC) Training” slide

- This slide provides a high level overview of the training strategy for the National Targeting Centre
- Training on the two primary eManifest systems: Phoenix, RAPM
- Various Training methods will be used and post-training support will be provided to the users.

Additional details:

Training Summary:

RAPM (Risk Assessment Program Maintenance)

~350 end-users - National Targeting Centre (NTC) Targeting Officers and Superintendents, Commercial Analysts, and HQ end-users

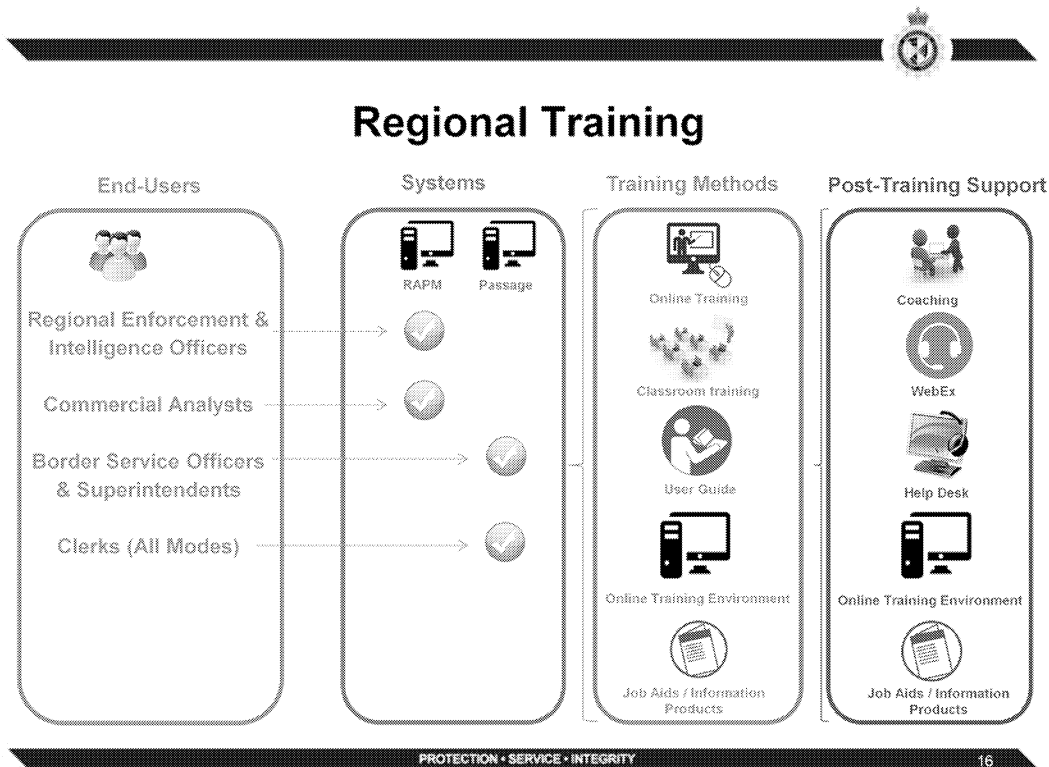
Training duration: ~Up to 1 day of training per end-user.

Phoenix

~150-200 end-users - NTC Targeting Officers and Superintendents, and HQ users

Training duration - ~Up to 2 days of training per end-user.

Post training support will be as-required based on observations during training, training evaluations, and feedback from end-users.



Regional Training” slide

Key Messages:


- This slide provides a high level overview of the training strategy for the employees in the regions
- Training on the two primary eManifest systems: RAPM for regional intelligence and Passage for POE personnel.
- Various Training methods will be used and post-training support will be provided to the users.
- Our next steps with training include:
 - In the coming weeks and months, we will consult with the Regions , Commercial Programs, Commercial Operations, and the Chief Working Group to ensure effective operational planning for training
 - For our design and development of training we will be collaborating with TDD

Additional Details:

Passage

~5000 end-users - BSOs, Superintendents, Clerks in all modes, and HQ users

Training duration - ~ Up to 3 days of training per end-user.



Benefits of eManifest

<ol style="list-style-type: none"> 1. Risk assessment happens before goods arrive in Canada. 2. Trade Chain partners electronically transmit advanced commercial information. 3. Automated risk assessment is expanded to all modes with the inclusion of highway and rail. 4. Enhanced risk assessment allows for the dynamic creation of automated risk rules across 8 threat categories. 5. Focus on high risk shipments for targeting and inspection. 6. Better quality data will reduce costly requests for information (RFI) to the Trade. 7. Facilitates the legitimate flow of low-risk trade. 8. Lowers the overall cost of reviewing shipments 9. Standardizes the commercial risk assessment process. 	<ol style="list-style-type: none"> 1. Data Acquisition - All trade chain partners transmit data electronically prior to arrival from all modes. 2. Entity Model - Pre-arrival trade data from multiple documents is compiled into "entities" that provide a complete view of the shipment, conveyance, and equipment. Risk assessment happens at the entity level rather than on individual trade documents. 3. Automated Risk Assessment - 100% of commercial shipments, across all modes, are risk assessed prior to arrival. Automated threat-based risk determinations will be used to identify high and unknown risk. Low risk shipments will be automatically released. 4. Integrated Targeting Model - Risk assessment for admissibility and release decisions in all four modes is done by targeting officers at the NTC. 5. Business Intelligence - Risk assessment results and examinations are used to "close the loop", revise risk assessment rules and continually improve the risk assessment process.
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PROTECTION • SERVICE • INTEGRITY
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The current reliance on paper documentation is burdensome and not easily used for risk assessment

- Information from various sources at different times leads to an incomplete picture of the whole shipment
- Insufficient regulations on information required from trade to ensure proper security at the border
- Aging systems with limited functionality, which takes time for officers to process at the border
- Uncertainty for trade about status of processing of their shipments at the border

After eManifest

- 100% Electronic documentation for more comprehensive information regarding risk decision-making
- Shipment information from all sources linked to see the whole picture of an importation
- New regulations will ensure the Agency has the necessary information to make informed decisions
- New user-friendly systems that will facilitate informed and efficient decision making at the border
- Improved two-way electronic messaging with trade that will help all TCPs share information on shipment status throughout the process



Next Steps

- Future eManifest releases
 - Fall/winter, Trade will be able to receive new notices regarding shipment status
 - Spring 2016, National Targeting Centre will be able to view targets and risk assessment results (Deployment 4)
 - Winter 2016/2017, National Targeting Centre is able to make risk assessment decisions. Implementation and training activities will thereafter follow allowing shipments to be processed at CBSA Offices using the Passage application.
- Working with the Programs and Operations Branch to communicate process pertaining to regulatory compliance.

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“Next Steps” slide

Key Messages:

- The project is focussed on implementing significant releases.
- Programs, Operations, and IST Branches are working together on communicating regulatory compliance timelines.
- In the coming weeks and months, we will consult with the Regions, Commercial Programs, Commercial Operations, and the Chief Working Group to ensure effective operational planning for training

Compliance Timelines as per the CBSA website:

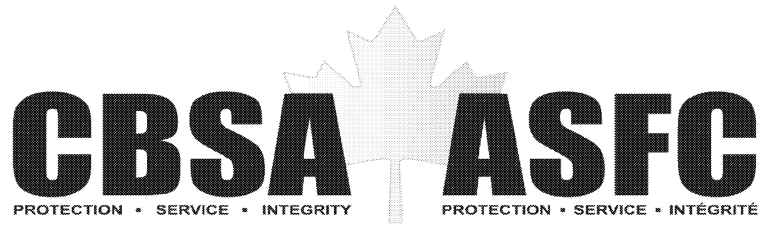
On May 6, 2015, regulatory amendments supporting the eManifest initiative were published in the Canada Gazette, Part II. eManifest requirements for highway carriers are now mandatory and the Agency is working with carriers on corrective measures to help them comply with requirements. The following implementation timelines apply:

- From July 10, 2015, to January 10, 2016, carriers who do not comply with eManifest requirements may be issued zero-rated penalties (non-monetary) under the CBSA's Administrative Monetary Penalty System (AMPS).
- Beginning January 11, 2016, carriers who do not comply with eManifest requirements may be issued monetary AMPS penalties.

Additional information communicated by Customs Notice 15-030 *“Interim eManifest Requirements Respecting Empty Highway and Rail Conveyances and In-transit*

6-Mar-17

Highway and Rail Conveyances”



eManifest Build 1

Privacy Impact Assessment (PIA)

PROTECTED B

CRAAI
May/ 2014 / Ver. 1.10

Ver. 2014-05-16

Version Control

Version	Author	Action	Date
1.0	Carla Custance	First Draft	April 15, 2013
1.1	Carla Custance	Updated with Michael Patenaude's Comments	April 17, 2013
1.2	Robin Lortie/ Mario Plouffe	Recommendations from ATIP	May 7, 2013
1.3	Carla Custance	Changes Based on ATIP's and Privacy Consultant's recommendations	May 8, 2013
1.4	Carla Custance	Changes based on PIA Working Group Feedback	June 11, 2013
1.5	Carla Custance	Changes based on Privacy Consultant feedback and Final PIA Working Group Feedback	June 24, 2013
1.6	Carla Custance	Small wording changes and added text to details for question 13.1 based on manager feedback.	July 11th, 2013
1.7	Carla Custance	Updated based on ATIP's final feedback	August 2, 2013
1.8	Carla Custance	Updated based on Legal Service's comments and final review.	August 7, 2013
1.9	Carla Custance	Updated the TRA section	November 4, 2013
1.10	Carla Custance	Amended to include the addition of CDEM and AVI that will be used to support Risk Assessment in Build 2 as well as the operational use of the data warehouse.	May 15, 2014

Change Control Table

Version	Date	Change Made By	Change Requested By	Change

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Privacy Impact Assessment Date / Version:	YYYY-MM-DD (Date sent to OPC)
Office of the Privacy Commissioner file #:	000816
Project Implementation Plan (if applicable)	
Federal Institution:	Canada Border Services Agency (CBSA)
Related Class of Record Number:	CBSA IST 002
Personal Information Bank:	CBSA PPU 048
Government Official Responsible for PIA:	Vice President, Programs Branch
Delegate for section 10 of the <i>Privacy Act</i> :	ATI and Privacy Director

EXECUTIVE SUMMARY

eManifest Build 1

eManifest is the third phase of the Advance Commercial Information (ACI) program, which mandates the submission of electronic pre-arrival commercial information, increasing the Canada Border Services Agency's (CBSA) ability to perform an effective risk assessment prior to the commercial goods arriving in Canada. The ACI program is about getting the right information at the right time to enhance the CBSA's ability to identify potential threats to Canada, while facilitating the movement of low-risk commercial goods across the border.

The CBSA successfully implemented Phase I (Marine mode) and Phase II (Air mode) of the ACI program in April 2004 and June 2006 respectively. Phase III of the ACI initiative, eManifest, extends the requirements of ACI Phases I and II to the highway and rail modes. Furthermore, once fully implemented, eManifest will require commercial carriers, freight forwarders and importers or their brokers in all modes of transportation (air, marine, highway and rail) to electronically transmit pre-arrival cargo, conveyance, house bill/supplementary cargo and importer advanced trade data to the CBSA, as well as crew information.

eManifest will be implemented in three builds as follows:

- Build 1 includes electronic pre-arrival submission of cargo and conveyance information in the highway mode (implemented October 2010), rail mode (implemented May 2012) and house bills in all modes (implemented in June 2013), and the introduction of the eManifest Portal advanced information transmission method and enhanced notification processes (August 2011);
- Build 2, which will be implemented at a future date, will include the optional electronic pre-

arrival submission of importer data (advance trade and release data) and will introduce an enhanced automated risk assessment system for transmitted importer, cargo, conveyance, and house bill information in all modes; and

- Build 3, which will be implemented at a future date, will include the submission and subsequent risk assessment of electronic pre-arrival crew information in all modes and enhanced functionalities for risk assessment.

The CBSA has developed an implementation strategy for eManifest where participation will be voluntary for the first year following each implementation date to allow clients time to prepare for mandatory program requirements. This will be followed by a 6 month informed compliance period where only zero-rated penalties will be applied, at the end of which participation will be mandatory.

This Privacy Impact Assessment (PIA) is specific to Build 1 of eManifest. Separate PIAs will be completed for each of the subsequent builds, as they include additional personal information elements and may include additional uses for the information.

The personal information collected in Build 1 on the cargo and house bill submissions includes contact information for the shipper, consignee, notify, and delivery parties, dangerous goods contact information, as well as vehicle/equipment identification information. This information is utilized in risk assessment to determine admissibility and release of goods into Canada, and will also be used for business analytics and reporting in the Enterprise Data Warehouse Environment (EDWE). These fields are usually classified as commercial information, but if the business is a sole proprietorship, they are considered to be personal information.

This personal information is transmitted electronically to the CBSA by a carrier, freight forwarder or service provider through either Electronic Data Interchange (EDI) (all modes) or through a new information transmission option, called the eManifest Portal, which allows for the electronic submission of pre-arrival commercial information through the Internet (house bills all modes, and cargo and conveyance data in the highway mode only). Information must adhere to the following timeframes by mode:

Type of Submissions for Build 1	Timeframe
Highway cargo, conveyance and house bill information	A minimum of one hour prior to arrival in Canada
Rail cargo, conveyance and house bill information	A minimum of two hours prior to arrival in Canada
Marine house bill information	Twenty-four hours prior to loading on the vessel at the last foreign port of loading depending on type and origin of commercial goods
Air house bill information	Four hours prior to arrival in Canada or at time of departure for flights less than 4 hours in duration

Carriers and freight forwarders who wish to submit information through the eManifest Portal must register for an account. This process begins with a cyber-authentication offered by the government of Canada (outside the scope of this PIA). Then the CBSA requires Business Account owners to obtain a shared secret, and register for both a Portal Business Account and User Account; all three of these steps require contact information to be provided. In addition, language preference is required to create a Portal User Account. Account Owners may designate other users for their account. These other users only register for a Portal User Account. This contact information will not have any other use outside of registration, testing and client support. All Portal users are also issued a Unique Reference Number (URN) for identification purposes.

Similarly, carriers and freight forwarders wishing to submit information through EDI must provide contact information as part of the registration process. This information will only be used for registration, testing and client support.

The eManifest compliance management framework provides for client support plans and compliance management plans which include communications, outreach activities, policy and technical support helpdesks and compliance management activities which are all designed to educate clients and promote compliance.

The CBSA is implementing the following to enhance the privacy protections of the personal information collected for eManifest Build 1:

- Registering a personal information bank (PIB) for eManifest with Treasury Board of Canada Secretariat (TBS) for publication in Info Source;
- Restricting the use of trade document personal information to risk assessment, admissibility, business analytics, compliance monitoring and client support;
- Restricting the use of registration personal information to registration, testing and client support; and
- Controlling access to the databases containing the personal information.

Right of Access

An individual will be informed of the purposes, uses, disclosure and retention of his/her personal information through a Privacy Notice Statement (PNS). Portal clients will view and accept this PNS in the Terms and Conditions every time they log on to the Portal. This PNS will also be included in the paper registration process required for EDI clients.

An individual may formally request access to his/her personal information, or access to corporate records related to or created by eManifest by contacting the Access to Information and Privacy (ATIP) Division. More information about this can be found at: <http://www.cbsa-asfc.gc.ca/agency-agence/reports-rapports/pia-efvp/atip-aiprp/menu-eng.html>.

Accountability

If an individual has concerns about the collection, use, disclosure or retention of his/her personal information, he/she may issue a complaint to CBSA ATIP. Complaints should be made in writing, and include the individual's name, contact information, and a brief description of his/her concerns. Contact information for the Access to Information and Privacy Division at the CBSA can be found at <http://www.cbsa-asfc.gc.ca/agency-agence/reports-rapports/pia-efvp/atip-aiprp/contact-eng.html>.

ABBREVIATIONS AND ACRONYMS

The following is a list of abbreviations and acronyms used in this report:

ACI	Advance Commercial Information
ACROSS	Accelerated commercial Release and Operations Support System
ATIP	Access to Information and Privacy
CBSA	Canada Border Services Agency
CECP	Customs Electronic Commerce Platform
CCS	Commercial Customs System
CLF	Common Look and Feel
COR	Class of Record
CTS	Commercial Trade Services
DSO	Departmental Security Officer
ECCRD	Electronic Commerce Client Requirements Document
ECU	Electronic Commerce Unit
EDI	Electronic Data Interchange
FPOA	First Point of Arrival
GOC	Government of Canada
GSP	Government of Canada Security Policy
HQ	Headquarters
ID	Identification
ISA	Information Sharing Agreement
IT/IM	Information Technology/Information Management
LAN	Local Area Network
MOU	Memorandum of Understanding
NTC	National Targeting Centre
OPC	Office of the Privacy Commissioner of Canada
PA	<i>Privacy Act</i>
PAA	Portal Application Administration
PDF	Portable Document Format

PI	Personal Information
PIA	Privacy Impact Assessment
PIB	Personal Information Bank
RDA	Records Disposition Authority
TBS	Treasury Board Secretariat
PNS	Privacy Notice Statement
TCP	Trade Chain Partner
TRA	Threat and Risk Assessment
TSU	Technical Support Unit
URN	User Reference Number
US	United States
VP	Vice-President
VPN	Virtual Private Network

DEFINITIONS

This section provides definitions of the terms frequently used in this report:

Action Plan	The Action Plan describes the steps that the Program will take to address risks that have been identified by the ATIP Division, the Office of the Privacy Commissioner (OPC) and TBS.
ACROSS	Accelerated Commercial Release Operations Support System (ACROSS) - A mainframe system that is used to validate and store TCP data and generate notices. It is also used to review and record admissibility decisions.
Administrative purpose	The <i>Privacy Act</i> defines an “administrative purpose” to be the use of an individual’s personal information in a decision-making process that directly affects that individual.
Administrative Monetary Penalty System	The Administrative Monetary Penalty System (AMPS) is a civil penalty regime that encourages compliance with CBSA administered legislation through the application of monetary penalties. An AMP applies to contraventions of the <i>Customs Act</i> , the Customs Tariff, and their regulations, as well as contraventions of the terms and conditions of licensing agreements and undertakings. The CBSA will use an AMPS to impose monetary penalties in proportion to the type, frequency, and severity of the infraction. Most penalties are graduated and will take the compliance history of the client into consideration. An AMP does not affect businesses that continue to comply with CBSA requirements and regulations.
Carrier Code	A carrier code is a four character unique identifier that is assigned by the CBSA to identify a carrier approved by the CBSA.
Confidentiality	A characteristic applied to information to signify that it can only be disclosed to authorized individuals to prevent injury to national or other interests.
Cargo	Commercial goods transported in any mode of transportation, detailed on a cargo control document, with a dedicated unique cargo control number.
Cargo Control Document	CBSA mandates that the information on all cargo/shipments being carried into or exported from Canada by a Commercial Carrier be reported on a document (electronic or paper) with a CBSA specified format. This document is called a cargo control document. It is also referred to as a cargo manifest and is used by the CBSA for risk assessment of the cargo and carrier and controlling the movement of the cargo.
Consistent use	Is a use that has a reasonable and direct connection to the original purpose(s) for which the information was obtained or compiled. This means that the original purpose and the proposed purpose are so closely related that the individual would expect that the information would be used for the consistent purpose, even if the use is not spelled out.
Conveyance	Any vehicle, aircraft or water-borne craft or any other contrivance that is

	used to move persons or goods.
Darryl	An access database where carrier records are stored.
Data Matching	A comparison of personal data obtained from a variety of sources, including personal information banks, for the purpose of making decisions about the individuals to whom the data pertains. Data matching is a specialized activity involving the collection, use and disclosure of personal information that is subject to the various requirements of the <i>Privacy Act</i> .
House Bill	A Cargo Control Document (electronic or paper) submitted by a Freight Forwarder for shipments that have, or will be, deconsolidated from another Cargo Control Document.
Importer Data	An individual or business that imports commercial goods to Canada. The importer is responsible for: <ul style="list-style-type: none"> · The payment of all duties and taxes to the CBSA. · The accuracy of the information presented to the CBSA. · Fines or penalties resulting from missing or inaccurate information. · Necessary import permits and special certificates needed. In many cases a customs broker will act on behalf of the importer for a fee.
Info Source	Is a series of annual TBS publications in which government institutions are required to describe their institutions, program responsibilities and information holdings, including Personal Information Banks (PIBs) and classes of personal information. The descriptions are to contain sufficient clarity and detail to facilitate the exercise of the right of access under the <i>Privacy Act</i> . Data-matching activities, use of the SIN and all activities for which privacy impact assessments were conducted have to be cited in <i>Info Source</i> PIBs, as applicable. The <i>Info Source</i> publications also provide contact information for government institutions as well as summaries of court cases and statistics on access requests.
Personal Information	Information about an identifiable individual as defined in section 3 of the <i>Privacy Act</i> . This definition, although lengthy, is not exhaustive, as indicated by the introductory phrase, "including, without restricting the generality of the foregoing". Information that is not specifically mentioned in the list may still be included in the definition of personal information if it qualifies as "information about an identifiable individual".
Personal Information Bank	Is a description of personal information that is organized and retrievable by a person's name or by an identifying number, symbol or other particular assigned only to that person. The personal information described in the personal information bank has been used, is being used, or is available for an administrative purpose and is under the control of a government institution.
Privacy	Is the right of an individual to be left alone, to be free of unwarranted intrusions. It is also the right of an individual to retain control over his or her personal information and to know the uses, disclosures and whereabouts of that information.

Trade Chain Partner (TCP)

A trade chain partner includes any individual or business involved in the import and export of commercial goods, and includes importer, broker, carrier, freight forwarder, service provider, and any other designated agent

SECTION 1 - OVERVIEW AND INITIATION

Report Objectives

This report is a Privacy Impact Assessment (PIA) for Build 1 of the eManifest project of the Canada Border Services Agency (CBSA). The objectives of this PIA are:

- to review the business processes in order to identify the flow of personal information;
- to analyze the collection, use, disclosure and retention of personal information;
- to determine if there are privacy risks associated with the Build 1 of the eManifest project; and
- to provide recommendations on the mitigation or elimination of the risks.

The information presented in this report follows the *Directive on Privacy Impact Assessment (2010.)*

The purpose of a PIA process is to ensure that privacy is considered throughout the project development cycle. The results of a PIA are a documented guarantee that privacy issues have been identified and adequately addressed.

Government Institution: Canada Border Services Agency, (Programs Branch)

Government Official Responsible for the Privacy Impact Assessment

Maurice Chénier, Vice-President

Head of the government institution / Delegate for section 10 of the *Privacy Act*

Dan Proulx, Privacy Director

Name of Program or Activity of the Government Institution:

eManifest Initiative: Build 1

Description of Program or Activity:

Risk Assessment

The Risk Assessment program “pushes the border out” by seeking to identify high-risk people, goods and conveyances as early as possible in the travel and trade continuum to prevent inadmissible people and goods from entering Canada. This benefits the travelling public and the trade community by enabling the Agency to focus its examination and interdiction activities on high-risk people and goods, thereby facilitating the entry of low-risk travellers and goods. The Agency uses a variety of threat and risk assessment methodologies, intelligence and supporting technologies to identify potential risks to the security and safety of people and goods.

Targeting

The Targeting Program identifies people and goods bound for Canada that may pose a threat to the security and safety of the country. The CBSA uses a number of automated advance information sources from carriers and importers to identify people, goods and conveyances that may pose a threat to Canada. Advance Passenger Information and Advance Commercial Information provide the CBSA with electronic pre-arrival information on people and goods that can be used to perform risk assessments in advance of their arrival in Canada. Known threats are identified when there is a match against an enforcement database entry. People and goods that are identified as posing a threat to Canada are referred for verification and examination upon their arrival at a port of entry.

Description of the class of records associated with the program or activity:

Describes records related to eManifest. May include records related to the establishment or use of electronic systems used to administer or manage the program including the eManifest Portal, Data Warehouse and Passage components. Further, the Accelerated Commercial Release Operations Support System (ACROSS), Business Number (BN), Canadian Police Information Centre (CPIC), CBSA Assessment and Revenue Management (CARM), Commodity Search Component (CSC), Customs Commercial System (CCS), Customs Electronic Commerce Platform (CECP), Customs Investigations Information Management Systems (CIIMS), Citizenship and Immigration Canada's Field Operations Support System (FOSS), Facility for Information Retrieval Management (FIRM), Integrated Customs Enforcement System (ICES), Integrated Customs System (ICS), Integrated Primary Inspection Line (IPIL), Intelligence Management System (IMS), Police Information Retrieval System (PIRS), Tactical Information Targeting Analysis and Notification System, (TITAN), and the Traveler Entry Processing System (TEPS).

Document Types: Customs Act, Regulations, Customs Notices, Departmental Memoranda, Threat and Risk Assessment, Statement of Sensitivity, Preliminary Privacy Impact Assessment, Privacy Impact Assessment and Memoranda of Understanding.

Class of Record

CBSA IST 002

Number:

- ☐ Proposal for a New Personal Information Bank
- ☒ Proposal to modify an existing Personal Information Bank - identify PIB registration number and current description:

Title of PIB: eManifest

Description: This bank describes information that is used in support of determining the admissibility of commercial goods, conveyances and equipment into Canada. The personal information may include business to business comments, place of acceptance, tractor and trailer plates, place of consolidation, and name, address and phone number for the shipper, consignee, consolidator, dangerous goods contact, notify party and delivery party. Personal registration information will include business name, business type, company official name, position title, telephone number, fax number, email address, address, language preference, Unique Reference Number and signature of company official.

Class of Individuals: General public.

Purpose: Personal information is used to administer the eManifest program or activity and to conduct risk assessment in order to predetermine admissibility of commercial goods and conveyances into Canada, record the passage at the border, and act upon the recommendations resulting from the risk assessment process. Some personal information is used for registering carriers and freight forwarders so that CBSA systems can accept their electronic information. Personal information is collected under the *Reporting of Imported Goods Regulations* pursuant to *Section 12.1* of the *Customs Act*.

Consistent Uses: The information may be used or disclosed for the following purposes: Enforcement, safety, security, compliance management, reporting, and business analytics within the Canada Border Services Agency. It is also used for client support. Personal information may be disclosed to the U.S. Customs and Border Protection pursuant to *Section 107.1* of the *Customs Act*. Personal information may be shared with other government departments when and if required on a case-by-case basis.

PIA: Yes a PIA has been developed prior to the development of the PIB.

Retention and Disposal Standards: Under development

RDA Number: Under development

Related Class of Record Number: CBSA IST 002

Bank Number: CBSA PPU 048

- ☐ Proposed new Standard Personal Information Bank
- ☐ Proposal to modify an existing Standard Personal Information Bank - identify Standard PIB number and current description:

Legal Authority for Program or Activity:**Current Authorities****Section 12.1 Customs Act**

12.1 (1) Before the arrival of a conveyance in Canada, the owner or person in charge of a conveyance who is prescribed or any other prescribed person shall give the Agency prescribed information about the conveyance and the persons and goods on board or expected to be on board the conveyance.

(2) A person who is required to provide information under subsection (1) shall hold a valid carrier code unless they are exempt.

(3) An application for a carrier code shall be made in the prescribed form with the prescribed information.

(4) The Minister shall issue a carrier code to a person who applies for it if the application meets the requirements referred to in subsection (3) and the Minister is satisfied that the prescribed requirements and conditions for the carrier code to be issued have been met.

(5) The Minister may, subject to the regulations, suspend, cancel or reinstate a carrier code.

(6) The Minister may issue a notification to any person who provides information under subsection (1) to require the person to take any specified measure with respect to the information.

(7) The person to whom a notification is issued shall comply with the notification.

(8) The Governor in Council may make regulations for the purposes of this section, including regulations

(a) respecting the information that must be given under subsection (1);

(b) prescribing the persons or classes of persons who must give the information under subsection (1);

(c) respecting the circumstances in which the information must be given under subsection (1);

(d) respecting the time within which and the manner in which the information must be given under subsection (1);

(e) regarding the requirements and conditions that are to be met before a carrier code may be issued;

(f) regarding the persons or classes of persons who are exempt from holding a valid carrier code; and

(g) regarding the manner and circumstances in which a carrier code may be suspended, cancelled or reinstated.

Section 107.1 Customs Act

107.1 (1) The Minister may, under prescribed circumstances and conditions, require any prescribed person or prescribed class of persons to provide, or to provide access to, within the prescribed time and in the prescribed manner, prescribed information about any person on board or expected to be on board a conveyance.

Section 7.1 Customs Act

Obligation to provide accurate information

7.1 Any information provided to an officer in the administration or enforcement of this Act, the Customs Tariff or the Special Import Measures Act or under any other Act of Parliament that prohibits, controls or regulates the importation or exportation of goods, shall be true, accurate and complete.

Section 109.1 Customs Act

Designated provisions

109.1 (1) Every person who fails to comply with any provision of an Act or a regulation designated by the regulations made under subsection (3) is liable to a penalty of not more than twenty-five thousand dollars, as the Minister may direct.

The following authorities are in progress and will be in place prior to us mandating the collection of the information:

Reporting of Imported Goods Regulations

Proposed coming into force date – Summer/Fall 2014:

The proposed amendments require highway and rail carriers to provide cargo and conveyance information electronically to the CBSA before the conveyance arrives at the border. This requirement gives the CBSA time to assess risks and make informed determinations without creating significant delays to the travel time of the carrier. Additionally, rail, air and marine carriers will be required to provide an electronic arrival message to the CBSA upon arrival in Canada. The proposed regulatory amendments also specify the terms and conditions for obtaining a carrier code and the grounds for suspending or cancelling a carrier code. The amendments also stipulate that carriers and freight forwarders be required to keep the information regarding their carrier codes up to date and are required to inform the CBSA of certain changes. The carrier code requirements ensure that carriers and freight forwarders are accountable for the advance commercial information they provide to the CBSA.

This also includes the additional requirements for freight forwarders to transmit electronic house bill information for consolidated cargo in all modes.

Further amendments to the *Reporting of Imported Goods Regulations* will take place at a later date to include the requirements for carriers to transmit the prescribed crew/passenger information within the prescribed timeframe and manner which will be covered in the Build 3 PIA.

The following regulations are also being updated:

Customs Sufferance Warehouse Regulations:

Proposed coming into force date - Summer/Fall 2014:

Under the proposed amendments, Sufferance Warehouse Operators will be required to acknowledge for the receipt of goods in their warehouse through an electronic arrival message.

Transportation of Goods Regulations:

Proposed coming into force dates - Summer/Fall 2014:

Currently, commercial carriers are required to keep records relating to all commercial goods transported by it to Canada for three (3) years plus the current year. Carriers are required to keep paper records about cargo that has been imported into Canada on previous trips (e.g., who shipped the goods and where the goods were delivered). Under the proposed amendments, these record keeping requirements will be extended to freight forwarders as well as include all information provided to and received from the CBSA electronically for three (3) years plus the current year.

Designated Provisions (Customs) Regulations:

Proposed coming into force dates - Summer/Fall 2014:

Currently, monetary penalties are not assessed by the CBSA against air and marine carriers regarding existing Advance Commercial Information (ACI) requirements.

The Designated Provisions (Customs) Regulations will be amended to designate new subsections 12.1(2) and (7) of the *Customs Act* and new sections of the *Reporting of Imported Goods Regulations*. Together with existing designated provisions, this would allow for the CBSA to assess administrative monetary penalties for non-compliance in the following situations:

- failing to provide pre-arrival cargo and conveyance information;
- failing to provide cargo and conveyance information electronically or within the prescribed timeframes;
- failing to notify the CBSA without delay of a change to the advance commercial information provided;
- failing to comply with a notification issued by the CBSA regarding commercial goods destined for Canada; and
- failing to hold a valid carrier code.

The new administrative monetary penalties will conform to the existing standards of the CBSA's Administrative Monetary Penalty System (AMPS) program, which is based on uniform systematic criteria reflecting the risk and impact of each contravention.

Summary of the project, initiative, or change:

eManifest Project Overview (Build 1 to Build 3)

Purpose

The eManifest project will harmonize trans-border commercial processes between Canada, the United States (U.S.) and Mexico, thereby enabling the CBSA to increase the security and prosperity of Canada.

By eManifest end-state (Build 3), the CBSA will require pre-arrival, electronic receipt of cargo, conveyance, crew, and importer advance trade data in all modes of transportation. This advance information will be risk assessed using an automated system that will enable the Agency to make more informed decisions on whether to admit, examine or release the commercial goods upon arrival in Canada. As a result, resources will be focused on those people (in Build 3), commercial goods and conveyances posing the greatest risk to the security and prosperity of Canada. As an added benefit, the processing of commercial shipments will become more efficient.

Through the risk assessment of electronic advance commercial information prior to the goods arrival in Canada, the CBSA will increase its ability to target, screen, and detect patterns and trends. The ability to identify and interdict potentially high-risk people (Build 3), commercial goods and conveyances, while expediting the processing of low-risk people (Build 3), commercial goods and conveyances, will be greatly enhanced as a result of this risk assessment process.

Background

In April 2000, the Canada Customs and Revenue Agency (CCRA) launched a strategy for the evolution of Customs Programs in a document entitled *'Investing in the Future: The Customs Action Plan 2000 – 2004'*. Within this document, the approach for modernizing the Customs Program was clarified. The approach described in the Customs Action Plan is founded on improved risk management principles and the recognition that all people, goods, and conveyances entering Canada pose differing levels of risk. The ability to distinguish between the people, goods, equipment and conveyances that pose an unknown or greater level of risk and those that pose a lower level of risk, is fundamental to the security and prosperity of Canadian society.

Described within the Customs Action Plan are two initiatives that model the risk management platform within the Customs Commercial Process:

- Customs Self-Assessment (CSA) is a comprehensive program that concentrates on streamlined processes for commercial carriers and importers; and
- Advance Commercial Information (ACI), formerly known as Carrier Re-Engineering, is designed to employ risk-based, automated targeting against electronic carrier and commercial goods information transmitted before goods arrive in Canada, in order to detect high-risk goods, including contraband that may pose a threat to health, safety, and/or national security.

The CSA initiative was implemented December 3, 2001, at which time the focus shifted to ACI. eManifest was originally initiated by the ACI initiative under the Customs Action Plan and the Shared Border Accord (SBA) / Public Security Anti-Terrorism envelope.

A phased approach has been taken in developing and implementing the ACI initiative. In Phase I (April 2004), the CBSA introduced regulatory requirements and systems functionality to support the electronic, pre-arrival receipt and risk assessment of commercial information from marine carriers for commercial goods imported from offshore and transported by marine vessels. In Phase II (December 2005), similar regulations and systems functionality were introduced to support receipt of commercial information from air carriers importing goods. In addition, the existing requirements for ACI Marine were expanded to include goods imported from the U.S.

Phase III will be implemented under eManifest. eManifest will introduce the regulatory requirements and systems functionality to support electronic receipt and risk assessment of pre-arrival commercial information from highway and rail carriers, freight forwarders, importers, and brokers.

Overall Project Scope

A graduated multi-phased approach has been taken in the development and implementation of the eManifest project. The eManifest project consists of three Builds, which are as follows:

- Build 1 components, which have already been implemented
 - eManifest Portal & Portal Administration Application
 - Commercial cargo, conveyance and house bills information transmitted via the Portal
 - Commercial cargo, conveyance and house bills information transmitted via Electronic Data Interchange (EDI)
 - Commercial Document and Entity Management application
 - Operational use of the Data Warehouse in Risk Assessment
 - Testing of the Address Verification Interface (AVI) data preparation, which will be used in Build 2
- Build 2 – Planned to be implemented by July 2014
 - Electronic pre-arrival submission of importer information (advance trade and release data)
 - Automated risk assessment and Targeting Officer assessment (through new application) of importer, cargo, conveyance, and house bills in all modes (air, marine, highway, rail)
 - Data preparation and identity resolution
 - Passage: a new application for use by Border Services Officers to process commercial goods and conveyances at the border
- Build 3 – Planned to be implemented by December 2014

- Submission of pre-arrival crew information in all modes through EDI
- Submission of pre-arrival crew information in the highway mode through the eManifest Portal
- Automated Risk Assessment and Targeting Officer Assessment of crew information in all modes
- Passage: extending to crew
- Third party information used in Risk Assessment
- Submission of re-manifests in all modes through EDI
- Enhancements to risk assessment application
- Enhancements to data preparation and identity resolution

eManifest Build 1 Overview

Build 1 of eManifest, requires trade chain partners (TCPs) which include carriers, freight forwarders and service providers, to transmit electronic advance cargo and conveyance information in the rail and highway modes, and house bills in the air, marine, rail and highway modes to the CBSA according to the timelines outlined in the following table:

Type of Submission	Timeframe
Highway cargo, conveyance and house bill information	A minimum of one hour prior to arrival in Canada
Rail cargo, conveyance and house bill information	A minimum of two hours prior to arrival in Canada
Marine house bill information	Twenty-four hours prior to loading on the vessel at the last foreign port of loading depending on type and origin of goods
Air house bills information	Four hours prior to arrival in Canada or at departure for flights less than 4 hours in duration

Information Transmission Methods

Two electronic transmission methods are available to TCPs:

1. Electronic Data Interchange (EDI)

Electronic Data Interchange (EDI) is a standards-based computer-to-computer communication method that allows the CBSA's TCPs to transmit trade information to the CBSA through one of four options: a value-added network, a third party service provider, the Customs Internet Gateway (CIG), or by a direct connection to the CBSA.

TCPs must register with the CBSA before they can transmit information through EDI. The registration process is paper based. The TCP must send a completed registration form (available on the CBSA website) to the Technical Support Unit (TSU) or Electronic Commerce Unit (ECU). Upon approval, a technical profile is created in a CBSA internal

system. TCPs send messages to CBSA's test environment and once approved can begin sending information to the live production environment.

Application forms are stored in a locked cabinet and are only accessible by 30 people (15 TSU employees and 15 ECU employees).

The EDI transmission method is available for all eManifest submissions: cargo and conveyance submissions in rail and highway modes and house bill submissions in the rail, highway, air and marine modes.

The personal information required in these submissions is limited to contact information, which has been listed in detail in section 3 of this PIA. The CBSA will not require that crew information be transmitted until Build 3 of the project when it will have the regulatory authority to collect this information; however, the EDI highway requirements for conveyance information do include crew information fields which are marked for future use. TCPs have been advised not to populate these fields, but many are doing so. The crew information is personal and therefore must be managed in accordance with the *Privacy Act*. It is important to note that while the CBSA will not have the regulatory authority to collect crew information electronically in advance in the marine, rail, and highway modes until 2015, the CBSA does have the authority to collect this information upon arrival.

Information transmitted through EDI is processed by a legacy system called the Customs Electronic Commerce Platform (CECP) for basic syntax validation. If syntax errors are found, the information is sent back to the client. If no errors are found, the information (with the exception of unsolicited crew information) is passed onto the Accelerated Commercial Release Operations Support System (ACROSS) for business validation.

Information received by the CECP can be viewed in the CECP system for client support or system administration purposes. These employees all have enhanced reliability security screenings. Access to the information within the CECP itself is not logged, but the CECP does not have the functionality to support searches by field, preventing specific personal information retrieval. At the end of the information is transferred to a tape where it is stored in a locked room for 7 years, as part of a larger group of information elements which it cannot be separated from. Employees can access the tape through sign in and approval.

CECP is enterprise infrastructure, which is used across multiple business lines, one of which is eManifest. The agency's long term vision is to replace this aging technology with updated infrastructure for the protection of personal information under the *Privacy Act*.

2. eManifest Portal

An alternate transmission method is the eManifest Portal (Portal), a secure web-based information transmission environment developed by the CBSA to allow highway carriers to transmit their eManifest trade information to the CBSA electronically via the Internet. The eManifest Portal consists of two components: the Portal Application interfacing with the TCPs and the Portal Administration component interfacing with internal employees.

Portal Application

Highway carriers and freight forwarders in all modes use the Portal to transmit pre-arrival information, edit their submissions and check the status of their submissions. When air cargo arrives in Canada on a highway conveyance, referred to as a flying truck scenario, air carriers submit highway conveyance documents through the Portal. Warehouse Operators and Brokers can also use the Portal to view Manifest Forwards (see notices section below for more information). The Portal allows the user to save trade documents as drafts, retrieve, cancel or submit trade documents and edit submitted trade documents.

The eManifest Portal further enables users to view, change, amend, cancel and verify the status of trade documents submitted through EDI. Users can obtain a status history and details regarding submitted trade documents.

Syntax checks are completed in the Portal itself. The Commercial Trade Service (CTS) responds to the eManifest Portal application requests to submit and retrieve trade documents in XML format for authenticated and authorized Portal users. The information is then sent to ACROSS for business validation.

Both internal and external access to the Portal Application is tracked and logged.

Portal Registration Process

Similar to the EDI process, Portal users must register with the CBSA and have a valid user account. The registration process requires company and personal information related to the user and acceptance of terms of use. The Portal retains the registration information, including limited personal information and shared secrets, in order to identify and authenticate users.

Highway carriers must have a valid carrier code and a Shared Secret issued by the CBSA to register for an eManifest Portal Business Account.

Shared Secret

A Shared Secret is a temporary access code that a business will require to register for the eManifest Portal the first time. It will be issued to the authorized representative of the businesses that request access to the eManifest Portal and have a valid CBSA-issued carrier code. The Shared Secret will be used to authenticate and validate a highway carrier company when creating an eManifest Portal Business Account. Only the CBSA and the authorized representative of the company have access to this information. Third parties do not have access to this information.

Cyber authentication

The Government of Canada is giving clients the option of using either a commercial credential service (Sign-In Partner) or a government-issued credential service (GCKey) to access online government services.

- The Sign-In Partner is a credential service offered in collaboration with participating financial institutions. This service allows clients to log in to the eManifest Portal using their established online banking credential.
- GCKey is a service that permits clients to use a unique government-issued credential that protects their communications with online government programs and services such as the eManifest Portal.

Portal User Account

An eManifest Portal User Account is a standard way for all users to establish their identity in the eManifest Portal. All users of the Portal must create an eManifest Portal User Account. To create User Accounts, clients will be required to log on to the Portal with their Cyber Authentication Credential and accept the Portal Terms and Conditions. The clients will need to provide personal information about themselves and their user preferences. The User Account will be created and a User Reference Number (URN) will be system-generated. The URN will be uniquely associated with the Portal User Account, and therefore the registrant.

Portal Business Account

A Portal Business Account is an area in the eManifest Portal dedicated to individual highway carrier companies to conduct secure information transmissions with the CBSA. Portal Business Accounts are managed by Account Owners who are authorized representatives of a highway carrier. To create a Business Account in the Portal, the carrier must provide a valid CBSA-issued highway carrier code and Shared Secret. A carrier code is a 4-character identifier issued by the CBSA to carrier companies. This is part of a pre-existing program activity and is outside the scope of eManifest. The issuance of the Shared Secret (described above) is new, and is the result of the implementation of the eManifest Portal registration requirements. Individuals will be required to provide personal information and the Business Account will be created (for a comprehensive list of registration information please see Section 3). The Account Owner may add additional users to the Business Account and assign them a role. To do this, the Account Owner must provide the designated user's URN, family name and email address, which must be obtained directly from the individual user.

Portal Administration Application

This component allows the Portal Administrators to provide client support and maintain the health and continued operation of the Portal. The Portal Administrators have the ability to monitor and view the details of all Portal Business Accounts. In order to ensure the health of the Portal and assist users, approximately 30 Portal Administrators are able to review and access all user profiles and preferences. The business information will always be displayed with the option of viewing additional details, such as notes,

attachments, event history and Portal users associated with the selected Portal Business Account.

Information Validation

ACROSS receives the trade information submitted through EDI or Portal, stores the information and validates business rules e.g. confirms the carrier code is valid, that province codes submitted in address fields are actual provinces.

ACROSS is a legacy system and is not a component of eManifest. Users must logon with an assigned ID and password in order to access the system and this access is tracked and logged.

As mentioned previously unsolicited crew information is not stored in ACROSS.

A new application called Commercial Document and Entity Management (CDEM), will be replacing some ACROSS functionalities by the end of Build 2. It is now being established for that future purpose, and will be in production as of March 2014. CDEM is an application that owns, manages, processes, and queries all commercial documents. CDEM will store multiple versions of these documents for use by various project components.

eManifest is being implemented incrementally, and until CDEM is fully operational and other new eManifest risk assessment components are implemented (Build 2), ACROSS and CDEM will be run in parallel. For Build 1, only the ACROSS version of the data is being risk assessed, and CDEM is really just being established for its future use in Build 2. More information on CDEM will be provided in the Build 2 PIA, once it is being used for risk assessment. However, it is not a user-facing system and is simply replacing old functionality and will be able to manage various statuses of documents.

Notices

Notices refer to electronic messages that are sent back to the TCP, in response to the information they have submitted. Trade documents that contain syntax or business validation errors are rejected back to the client for amendment. When a trade document passes syntax and business validation, an acknowledgement message is sent back to the client.

Build 1 of eManifest introduces new notices called the Completeness notices which do not contain personal information:

- **Matched Completeness Notice** – an electronic notice that is generated and sent to the affected CBSA clients that indicates valid information has been transmitted to the CBSA and accepted, and paired with related transmitted information. Examples include cargo information matched with electronic release entries, and consolidated house bill information matched with House Bill Close Message information.
- **Not Matched Completeness Notice** – an electronic notice that is generated and sent to affected CBSA clients when valid information that was previously matched to other valid information is cancelled, causing it to be no longer linked. A Not Matched Notice will also be generated and sent to CBSA clients when valid trade information has been transmitted but not linked to other valid trade information.

Build 1 also introduces two new messages that the TCPs send to the CBSA which do not contain any personal information:

- **Arrival Notice** – TCPs in the rail, air and marine modes send a Conveyance Arrival Certification EDI message to the CBSA to report their arrival at FPOA.
- **House Bill Close Message** - is used to reconcile the correct number of house bills by quoting the previous Cargo Control Number (CCN) related to a consolidation. The Close Message also lists the carrier's cargo transmission that is to be deconsolidated and all the documents that make up the deconsolidation.

This Build also introduces Manifest forward functionality, which allows freight forwarders to forward a copy of their house bills to another registered TCP, by inputting that client's ID in the Secondary Notify Party field on the transmission. As mentioned above, house bill transmissions do include contact information (personal information in the case of sole proprietorship), which is shared with the TCP through this functionality.

Personal Information Uses

The personal information submitted in the cargo, house bill and conveyance (with the exception of crew) documents is used to determine admissibility and for risk assessment, business analytics, reporting, compliance monitoring, and client support.

Registration Information is used for registration, testing and client support.

user roles. Users belonging to a specific user role will be authorized to see certain parts of data in designated tables.

End-User Tool Access

Security features include role specific user permission, and request level usage audits.

Enterprise Data Warehouse Access

The following process has been defined for Enterprise Data Warehouse permission granting:

E522 (Access Management Request Form) - Requirements (For Production Access)

Under Additional Information please include:

1. Access for **EDWE**
2. Release Name (i.e. R136)
3. Initiative (i.e. B2B, eMan, etc)
4. Tool to be used with accessing Database (i.e. Clementine, Cognos)
5. Schema (if known) (i.e. Reporting, Mining, Entry-Exit ATIP, ICES).

Ensure within the e-522, the following:

6. Approvals at a director level
7. User-ID
8. User-Name
9. Employee Type (Indefinite, Term, Contractor)
10. If Term or contractor, start date and end date.

JIRA Requirements - For non-production access - For information, please contact CBSA-ASFC_DWS-SED).

For ease of communication please include in your subject line: EDWE Access Request – First Name, Last Name – Branch, Directorate, Division, Section

Include :

1. Environment (i.e. DWA1)
2. Release Name (i.e. R136)
3. Role for group access (i.e. client testers, users, BIRS Developers, DW Data Analysts, DW ETL, DW DBA, DW Data Modeller)
4. User-ID
5. User-Name
6. User Access Start Date
7. User Access End Date
8. Employee Type (Indefinite, Term, Contractor)
9. Initiative (i.e. B2B, eMan, etc)
10. Tool to be used with accessing Database (i.e. Clementine, Cognos)
11. Schema (if known) (i.e. Commercial Trade Reporting, Commercial Mining, Entry-Exit Mining Mart, API Compliance Mining Mart, ATIP Entry Exit, ICES).
12. Manager Approval is required, please ensure it is included
13. Other pertinent information (Please specify).

1 - Please note that all accesses may take up to 3 weeks to complete.

2 – Please note also that once you have confirmation of your access, please note that access to production data is subject to being monitored and audited. Any combination of data from the various data sources is strictly prohibited and you are fully responsible for how you access the data.

User Permissions Review Process

- 1) Permission reviews will be conducted on a bi-annual basis, triggered Apr 2 & Oct 2
- 2) End-User and approving director contact list housed in MS Outlook EDW Distribution List, owned by BIRA director
- 3) EDW permissions controls conducted via MS-Outlook dedicated email account
- 4) Contact with end-users initiated by the BIRA division administration office and logged in the Outlook account
- 5) Renewal approvals, de-commissioning of accesses logged in the Outlook account with indefinite retention
- 6) Permission information does not exit the MS-Outlook account except where authorized by the Director for audit purposes.

Audit Trail Implementation

At the time the previous version of the PIA was submitted, the EDWE did not have audit trails in place. Audit trails have since been implemented as follows:

IBM SPSS Data Modeller Audit Trail Specifications

Implementation Approach

Build 1 was implemented in four stages:

1. October 2010 – CBSA systems began receiving electronic pre-arrival submission of cargo and conveyance information in the highway mode;
2. August 2011 - the eManifest Portal was introduced as an alternative information transmission method to EDI for highway cargo and conveyance information;
3. May 2012 – CBSA systems began receiving electronic pre-arrival submission of cargo and conveyance information in the rail mode; and
4. June 2013 - CBSA systems began receiving electronic pre-arrival submission of house bill information in the highway, rail, air and marine modes.

The CBSA has developed an implementation strategy for eManifest where participation is voluntary for the first year following each implementation date to allow clients time to prepare for mandatory program requirements. This is followed by a 6 month informed compliance period where only zero-rated penalties are applied, at the end of which participation will be mandatory.

The voluntary submission period for highway trade documents was lengthened because the required regulatory amendments were delayed. These amendments will be in place in the summer/fall of 2014, and highway reporting requirements will be mandated at that time.

SECTION 2 - RISK AREA IDENTIFICATION AND CATEGORIZATION

Type of Program or Activity	Level of Risk
Program or activity that does NOT involve a decision about an identifiable individual Personal information is used strictly for statistical / research or evaluations including mailing list where no decisions are made that directly have an impact on an identifiable individual. The Directive on PIA applies to administrative use of personal information. The Policy on Privacy Protection requires that government institutions establish an institutional Privacy Protocol for addressing non-administrative uses of personal information.	<input type="checkbox"/> 1
Administration of Programs / Activity and Services Personal information is used to make decisions that directly affect the individual (i.e. determining eligibility for programs including authentication for accessing programs/services, administering program payments, overpayments, or support to clients, issuing or denial of permits/licenses, processing appeals, etc...).	<input checked="" type="checkbox"/> 2
Compliance / Regulatory investigations and enforcement	<input type="checkbox"/> 3

Personal information is used for purposes of detecting fraud or investigating possible abuses within programs where the consequences are administrative in nature (i.e. a fine, discontinuation of benefits, audit of personal income tax file or deportation in cases where national security and/or criminal enforcement is not an issue).

Criminal investigation and enforcement / National Security

☐ 4

Personal information is used for investigations and enforcement in a criminal context (i.e. decisions may lead to criminal charges/sanctions or deportation for reasons of national security or criminal enforcement).

Details: The information contained within the cargo and house bill transmissions is used to determine the admissibility of a shipment into Canada, not people. The majority of this information is customs information, however name and address fields (shipper, consignee, notify, delivery, dangerous goods contact) are classified as personal information if they represent a sole proprietorship. In this case we are risk assessing the business, not the person. This information is also used for business analytics and reporting purposes in EDWE. Unsolicited crew/passenger information, which is personal information, may be submitted as part of the highway conveyance report, and will not be used for any purpose. Personal information will be used with respect to the issuance of the Shared Secret as well as for the eManifest Portal Account registration and EDI registration.

Type of Personal Information Involved and Context	Level of Risk
Only personal information, with no contextual sensitivities, collected directly from the individual or provided with the consent of the individual for disclosure under an authorized program.	<input type="checkbox"/> 1
Personal information, with no contextual sensitivities after the time of collection, provided by the individual with consent to also use personal information held by another source.	<input checked="" type="checkbox"/> 2
Social Insurance Number, medical, financial or other sensitive personal information and/or the context surrounding the personal information is sensitive. Personal information of minors or incompetent individuals or involving a representative acting on behalf of the individual.	<input type="checkbox"/> 3
Sensitive personal information, including detailed profiles, allegations or suspicions, bodily samples and/or the context surrounding the personal information is particularly sensitive.	<input type="checkbox"/> 4
<p>Details: The personal information provided on the cargo and house bill submission includes company name and address information which may represent a sole proprietorship. The unsolicited crew personal information, which is not used, if submitted as part of the conveyance submission, includes name, address, contact information and travel document identification. The categories of personal information provided as part of the Shared Secret application include name and contact information and are only used to generate the shared secret. The categories of personal information provided as part of the Portal User Account registration process include name, contact information and preferred language. The categories of personal information provided as part of the Portal Business Account registration will include position title, name & contact information and Business contact information (Refer to Section 3 for a detailed listing of the Personal Information Elements and Sub-Elements).</p>	

Program or Activity Partners and Private Sector Involvement	Level of Risk
Within the CBSA (amongst one or more programs within the CBSA)	<input type="checkbox"/> 1
With other federal institutions	<input type="checkbox"/> 2
With other or a combination of federal/ provincial and/or municipal government(s)	<input type="checkbox"/> 3
Private sector organizations or international organizations or foreign governments	<input checked="" type="checkbox"/> 4
<p>Details: Personal information provided in the cargo, and conveyance submissions will be received by highway and rail carriers in the trade community, or by a service provider on their behalf. Personal information provided in the house bill submissions will be received from rail, highway, air and marine freight forwarders in the trade community, or by a service provider on their behalf. Unsolicited crew information may be received from highway carriers from the private sector. This unsolicited</p>	

information will not be used.

Highway Carriers will also provide personal information as part of the Shared Secret Application. In turn the CBSA will issue a Shared Secret to the authorized representative of the company who applied after verification at the business level has occurred to ensure that all elements provided are correct including the contact name. Personal information will be exchanged between highway carriers and CBSA through the eManifest Portal as part of the Registration Process.

Personal information received (with the exception of crew information) may be shared with Other Government Departments (OGDs) and United States Customs and Border Protection.

Freight Forwarders may elect to share their submission with other TCPs electronically by using the Manifest Forward notice.

Duration of the Program or Activity	Level of risk
One time program or activity Typically involves offering a one-time support measure in the form of a grant payment as a social support mechanism.	<input type="checkbox"/> 1
Short-term program A program or activity that supports a short-term goal with an established "sunset" date.	<input type="checkbox"/> 2
Long-term program Existing program that has been modified or is established with no clear "sunset".	<input checked="" type="checkbox"/> 3
Details: eManifest is a long term program with no sunset. Highway and rail cargo and conveyance information is currently being submitted on a voluntary basis. It will be mandated in the fall of 2013. The submission of House bills began on a voluntary basis in June 2013 and will be voluntary for an 18 month period, after which it will be mandatory.	

Program Population	Level of Risk
The program affects certain employees for internal administrative purposes.	<input type="checkbox"/> 1
The program affects all employees for internal administrative purposes.	<input type="checkbox"/> 2
The program affects certain individuals for external administrative purposes.	<input checked="" type="checkbox"/> 3
The program affects all individuals for external administrative purposes.	<input type="checkbox"/> 4
Details: The program/activity affects company owners, employees, and/or agents of highway and rail carriers, and freight forwarders in all modes, involved in the transportation of commercial goods into Canada and third parties whose information is collected. Third parties include shipper, consignee, notify and delivery parties.	

This information is collected to complete pre-arrival risk assessment of commercial goods, conveyances and equipment coming into Canada.

Technology and Privacy

6.1 Does the new or modified program or activity involve the implementation of a new electronic system, software or application program including collaborative software (or groupware) that is implemented to support the program or activity in terms of the creation, collection or handling of personal information?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
6.2. Does the new or modified program or activity require any modifications to IT legacy systems and / or services?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
6.3 Does the new or modified program or activity involve the implementation of one or more of the following technologies:	
6.3.1 Enhanced identification methods: This includes biometric technology (i.e. facial recognition, gait analysis, iris scan, fingerprint analysis, voice print, radio frequency identification (RFID), etc...) as well as easy pass technology, new identification cards including magnetic stripe cards, "smart cards" (i.e. identification cards that are embedded with either an antenna or a contact pad that is connected to a microprocessor and a memory chip or only a memory chip with non-programmable logic).	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Details:	
6.3.2 Use of Surveillance: This includes surveillance technologies such as audio/video recording devices, thermal imaging, recognition devices, RFID, surreptitious surveillance / interception, computer aided monitoring including audit trails, satellite surveillance etc.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Details:	
6.3.3 Use of automated personal information analysis, personal information matching and knowledge discovery techniques: For the purposes of the Directive on PIA, CBSA is to identify those activities that involve the use of automated technology to analyze, create, compare, cull, identify or extract personal information elements. Such activities would include personal information matching, record linkage, personal information mining, personal information comparison, knowledge discovery, information filtering or analysis. Such activities involve some form of artificial intelligence and/or machine learning to uncover knowledge (intelligence), trends/patterns or to predict behaviour.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

Personal Information Transmission	Level of Risk
The personal information is used within a closed system. No connections to Internet, Intranet or any other system. Circulation of hardcopy documents is controlled.	<input type="checkbox"/> 1
The personal information is used in a system that has connections to at least one other system.	<input checked="" type="checkbox"/> 2
The personal information is transferred to a portable device or is printed. USB key, CD-Rom, laptop computer, any transfer of the personal information to a different medium.	<input checked="" type="checkbox"/> 3
The personal information is transmitted using wireless technologies.	<input type="checkbox"/> 4
<p>Details:</p> <p>Personal information in the cargo, house bill and conveyance submissions are submitted through EDI (all modes) or Portal (cargo/conveyance highway only and house bills all modes). EDI information is assessed in CECP; Portal information is assessed in CTS. The information is then shared with the ACROSS system and then EDWE (with the exception of crew information).</p> <p>The Shared Secret application, contains personal information and is provided to the CBSA from the carrier via hard copy (i.e.: mail/fax) or electronically (emailed as a scanned PDF).</p> <p>The CBSA prints and mails the Shared Secret Letter (including name & Shared Secret) back to the originating client (i.e.: authorized individual who applied).</p> <p>The personal information provided as part of the portal registration and trade information will be transmitted electronically through the eManifest web portal.</p> <p>The personal information submitted as part of EDI registration is submitted on a paper form.</p>	

Risk Impact to the CBSA	Level of Risk
Managerial harm. Processes must be reviewed, tools must be changed, change in provider / partner.	<input type="checkbox"/> 1

Canada Border Services Agency/ Advance Commercial Information / eManifest Build 1		PIA
Organizational harm. Changes to the organizational structure, changes to the organizations decision-making structure, changes to the distribution of responsibilities and accountabilities, changes to the program activity architecture, departure of employees, reallocation of HR resources.	<input type="checkbox"/>	2
Financial harm. Lawsuit, additional moneys required reallocation of financial resources.	<input type="checkbox"/>	3
Reputation harm, embarrassment, loss of credibility. Decreased confidence by the public, elected officials under the spotlight, institution strategic outcome compromised, government priority compromised, impact on the Government of Canada Outcome areas.	<input checked="" type="checkbox"/>	4
Details: If trade information that contains personal information became public knowledge, the CBSA could lose credibility with the public.		

Risk Impact to the Individual or Employee	Level of Risk	
Inconvenience.	<input type="checkbox"/>	1
Reputation harm, embarrassment.	<input checked="" type="checkbox"/>	2
Financial harm.	<input checked="" type="checkbox"/>	3
Physical harm.	<input type="checkbox"/>	4
Details: An unintentional breach or disclosure could lead to financial harm for a sole proprietor.		

SECTION 3 - ANALYSIS OF PERSONAL INFORMATION ELEMENTS

Personal Information Elements and Sub-elements

Category Of Personal Information	Personal Information Element	Personal Information Sub-Element	Format	Purpose / Necessity of Element
Contact Information	Name and Address	1) Dangerous Goods Name and phone number 2) Place of Consolidation Name and Address 3) Shipper Name and Address 4) Consignee Name and Address 5) Notify party Name and Address 6) Delivery Address Name and Address 7) Place of Acceptance 8) Consolidator Name and Address	Electronic	This information is submitted as part of the cargo and house bill information. It is used for risk assessment purposes in order to make an admissibility decision regarding cargo.
Contact Information	Crew Member Information	1) First Name 2) Middle Name 3) Last Name 4) Date of Birth 5) Citizenship/Nationality	Electronic	CBSA does not require this information and is not requesting it in advance at this time as part of an EDI Highway conveyance transmission. In the event that it is received as part of an eManifest transmission it will not be used.

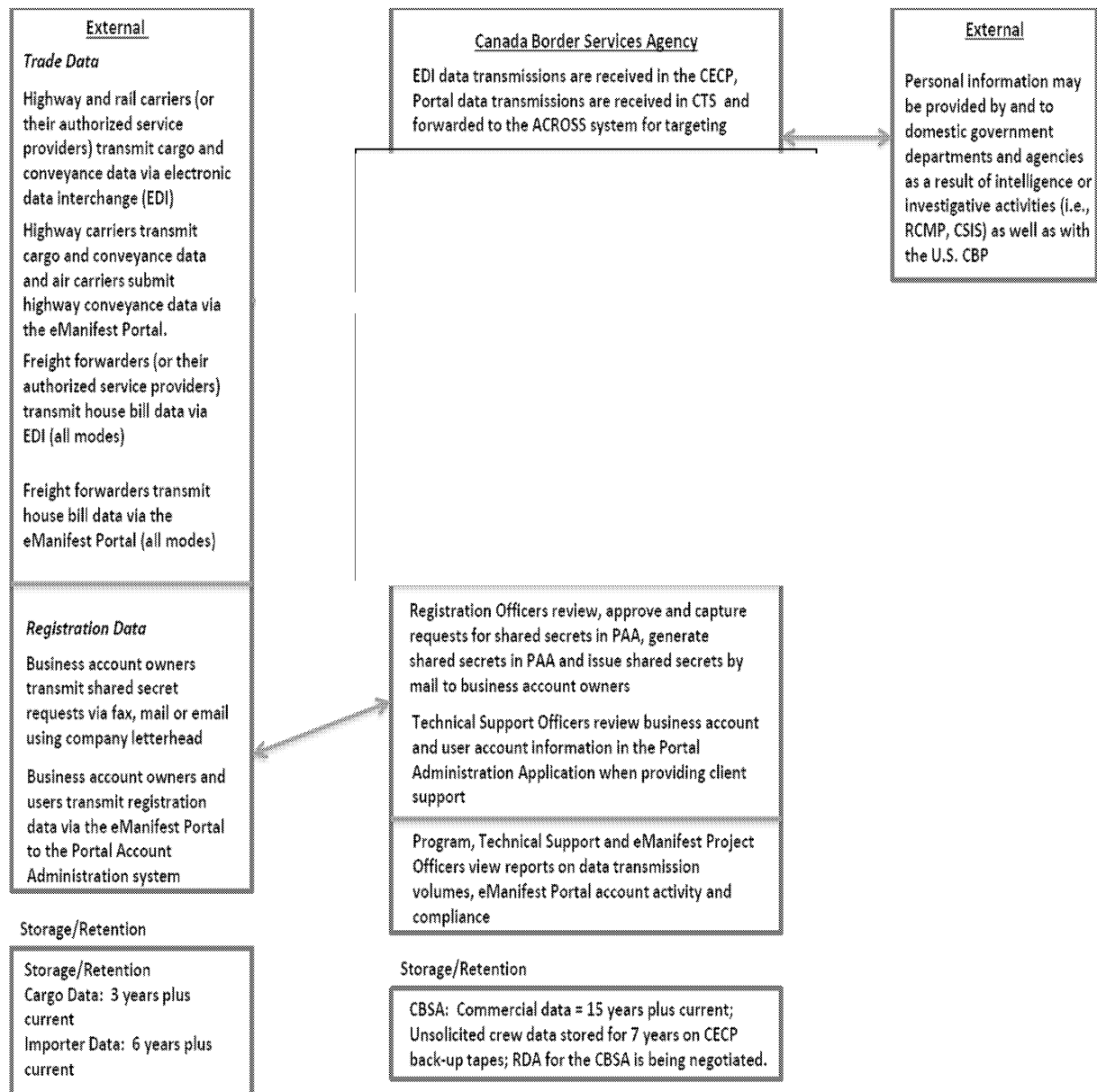
Category Of Personal Information	Personal Information Element	Personal Information Sub-Element	Format	Purpose / Necessity of Element
		6) Travel Document Type 7) Travel Document Number 8) Country of Issuance		
Shared Secret Application	Shared Secret Application	1) Company Name 2) Carrier Code 3) Contact Name and Title 4) Signature of Authorized Officer of the Company 5) Contact Phone Number 6) Contact email Address 7) Official Mailing Address	Electronic Or Paper	Shared Secret Application information is used to: <ul style="list-style-type: none"> identify, authenticate and verify the authorized officer of the company contact the authorized officer of the company and mail Shared Secret.
eManifest Portal User Account	eManifest Portal User Account	1) First Name 2) Family Name 3) Email Address 4) Telephone Number 5) Language Preference 6) URN	Electronic	eManifest portal User Account information is used to: <ul style="list-style-type: none"> identify user (User Reference Number is generated to manage their permissions in the portal) contact client identify which official language will be used for communication with client
	Account Owner Information	1) Position Title 2) Email Address	Electronic	Account Owner information is used to identify the person responsible for the Portal

Category Of Personal Information	Personal Information Element	Personal Information Sub-Element	Format	Purpose / Necessity of Element
		3) Telephone Number 4) Address 5) City 6) Country 7) Province/State 8) Postal/Zip Code		Business Account as outlined in the terms and conditions.
	Business Information	1) Business Name 2) Client Identifier 3) Business Type 4) Contact First Name 5) Contact Family Name 6) Contact Telephone Number 7) Contact Telephone Extension 8) Address 9) City 10) Province/State 11) Postal/Zip Code 12) Country	Electronic	Business Information is used to identify the business entity that is registered for a Portal Business Account for purposes to interact and transmit prescribed information to the CBSA via the eManifest Portal. Business Information is also used to keep TCP records up to date with the CBSA as they can request an update through the Portal.
EDI Registration	Contact Information	1) Company Contact Information and Official Title 2) Company or Contact person	Paper	This information is used to register the client for an EDI account and to contact the client.

Category Of Personal Information	Personal Information Element	Personal Information Sub-Element	Format	Purpose / Necessity of Element
		telephone number 3) Company or Contact person Fax number 4) Company Contact email address 5) Preferred language of communication 6) Name of individual as company official 7) Signature of Company official		
Other		1) Tractor plate and identifier 2) Trailer plate and Identifier 3) Business to Business Comments	Electronic	This information is submitted as part of the cargo and house bill information. It is used for risk assessment purposes in order to make an admissibility decision regarding cargo.

SECTION 4 - FLOW OF PERSONAL INFORMATION

4.1 eManifest Information Flow



4.2 Information Flow Model - Table

SOURCE	IDENTIFY THE SOURCE
The individual or a representative	<ul style="list-style-type: none"> For the Portal and EDI Registration Process the individual is the source
A federal government institution (identify from what PIB the information is obtained)	<ul style="list-style-type: none"> The Canada Border Services Agency (CBSA) will provide the Shared Secret to the individual (no one else will have access to this information). Canada Border Services Agency PIB CBSA PPU 048
Non federal institutions	
<ul style="list-style-type: none"> Provincial Government 	N/A
<ul style="list-style-type: none"> Municipal Government 	N/A
<ul style="list-style-type: none"> Aboriginal Government / Council 	N/A
<ul style="list-style-type: none"> Organization of a Foreign State 	N/A
<ul style="list-style-type: none"> International Organization 	N/A
Private Sector	
<ul style="list-style-type: none"> Located in Canada and Canadian Owned 	<ul style="list-style-type: none"> Highway or Rail Carrier or their Service Provider will provide personal information in the cargo, or conveyance submission. Freight Forwarders or their Service Provider in all modes will provide personal information in the house bill submission. Highway Carrier or their Service Provider may provide unsolicited crew/passenger information. For the Portal and EDI Registration Process the individual is the source Freight forwarders or their service provider may elect to have their submitted information forwarded to another TCP using the manifest forward functionality.

<ul style="list-style-type: none"> Located in Canada and Foreign Owned 	<ul style="list-style-type: none"> Highway or Rail Carrier or their Service Provider will provide personal information in the cargo, or conveyance submission. Freight Forwarders or their Service Provider in all modes will provide personal information in the house bill submission. Highway Carrier or their Service Provider may provide unsolicited crew/passenger information. For the Portal and EDI Registration Process the individual is the source Freight forwarders or their service provider may elect to have their submitted information forwarded to another TCP using the manifest forward functionality.
<ul style="list-style-type: none"> Located abroad and Canadian Owned 	<ul style="list-style-type: none"> Highway or Rail Carrier or their Service Provider will provide personal information in the cargo, or conveyance submission. Freight Forwarders or their Service Provider in all modes will provide personal information in the house bill submission. Highway Carrier or their Service Provider may provide unsolicited crew/passenger information. For the Portal and EDI Registration Process the individual is the source. Freight forwarders or their service provider may elect to have their submitted information forwarded to another TCP using the manifest forward functionality.
<ul style="list-style-type: none"> Located abroad and Foreign Owned 	<ul style="list-style-type: none"> Highway or Rail Carrier or their Service Provider will provide personal information in the cargo, or conveyance submission.

	<ul style="list-style-type: none"> ▪ Freight Forwarders or their Service Provider in all modes will provide personal information in the house bill submission. ▪ Highway Carrier or their Service Provider may provide unsolicited crew/passenger information. ▪ For the Portal and EDI Registration Process the individual is the source ▪ Freight forwarders or their service provider may elect to have their submitted information forwarded to another TCP using the manifest forward functionality.
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4.3 Internal Use and Disclosure

Program	Personal information bank
HQ Project teams: National Targeting Centre (NTC) Regional Commercial Operations IT CECF IT Administration IT Development IT Analysis IT Testing IT Maintenance IT ACROSS Electronic Commerce Unit eManifest Technical Support Unit eManifest project teams Compliance Verification (Advance Commercial Information Policy Unit) Trade Compliance Pre-Border Programs Border programs Business Intelligence and Risk	eManifest PIB # CBSA PPU 048

<p>Assessment Division</p> <p>eManifest Business Design and Development</p> <p>eManifest Stakeholder Consultations and Implementation</p> <p>Intelligence Programs</p> <p>Intelligence Operations</p> <p>Enforcement</p>	
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4.4 External Use and Disclosure

The individual or a representative	Individual - the Shared Secret will be issued to the authorized representative of the company who applied for it. It will not be issued to a third party.
A federal government institution	RCMP and CSIS (Note: Disclosure may take place in accordance with Section 8(2) of the <i>Privacy Act</i>). This is not within the scope of eManifest. May be shared with other government departments where established programs are in place.
Non-federal institutions and private sector	
▪ Provincial Government	N/A
▪ Municipal Government	N/A
▪ Aboriginal Government / Council	N/A
▪ Organization of a Foreign State	May also be shared with U.S. Customs Border Protection.
▪ International Organization	N/A
Private Sector	
▪ Located in Canada and Canadian Owned	<ul style="list-style-type: none"> Highway Carriers and Freight Forwarders in all modes will have access to the eManifest Portal to submit and edit their submissions as well as view statuses of their submissions. When air cargo arrives in Canada on a highway conveyance, referred to as a

	<p>flying truck scenario, air carriers submit highway conveyance documents through the Portal. Warehouse Operators and Brokers can also use the Portal to view Manifest Forwards. This applies only to the account they have been granted access to.</p> <ul style="list-style-type: none"> Using the Manifest Forward functionality, when a Freight Forwarder sends a house bill to the CBSA he can elect for it to be sent to a carrier, broker, warehouse operator, or another freight forwarder.
<ul style="list-style-type: none"> Located in Canada and Foreign Owned 	<ul style="list-style-type: none"> Highway Carriers and Freight Forwarders in all modes will have access to the eManifest Portal to submit and edit their submissions as well as view statuses of their submissions. When air cargo arrives in Canada on a highway conveyance, referred to as a flying truck scenario, air carriers submit highway conveyance documents through the Portal. Warehouse Operators and Brokers can also use the Portal to view Manifest Forwards. This applies only to the account they have been granted access to. Using the Manifest Forward functionality, when a Freight Forwarder sends a house bill to the CBSA he can elect for it to be sent to a carrier, broker, warehouse operator, or another freight forwarder.
<ul style="list-style-type: none"> Located abroad and Canadian Owned 	<ul style="list-style-type: none"> Highway Carriers and Freight Forwarders in all modes will have access to the eManifest Portal to submit and edit their submissions as well as view statuses of their submissions. When air cargo arrives in Canada on a highway conveyance, referred to as a flying truck scenario, air carriers submit highway conveyance documents

	<p>through the Portal. Warehouse Operators and Brokers can also use the Portal to view Manifest Forwards. This applies only to the account they have been granted access to.</p> <ul style="list-style-type: none"> Using the Manifest Forward functionality, when a Freight Forwarder sends a house bill to the CBSA he can elect for it to be sent to a carrier, broker, warehouse operator, or another freight forwarder.
<ul style="list-style-type: none"> Located abroad and Foreign Owned 	<ul style="list-style-type: none"> Highway Carriers and Freight Forwarders in all modes will have access to the eManifest Portal to submit and edit their submissions as well as view statuses of their submissions. When air cargo arrives in Canada on a highway conveyance, referred to as a flying truck scenario, air carriers submit highway conveyance documents through the Portal. Warehouse Operators and Brokers can also use the Portal to view Manifest Forwards. This applies only to the account they have been granted access to. Using the Manifest Forward functionality, when a Freight Forwarder sends a house bill to the CBSA he can elect for it to be sent to a carrier, broker, warehouse operator, or another freight forwarder.

4.5 Retention / Storage

A federal government institution	<p>CBSA:</p> <ul style="list-style-type: none"> Unsolicited Crew information contained within a conveyance transmission in CECF will be stored on a backup tape for 7 years, which will only be
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	<p>accessible by IT production and development staff.</p> <ul style="list-style-type: none"> • Shared Secret applications will be saved on the Carrier Record, which is accessible through a Microsoft Access Database (Darryl) if completed at the same time as applying for a carrier code. All the information provided in the Shared Secret Application and eManifest Portal Registration sections are stored in PAA except for the User Account information which is stored in Identity Manager (LDAP). • Personal information elements in the cargo, house bill and conveyance (except for crew information), will be stored in ACROSS and EDWE for 15 years plus current. They will also be stored on a backup tape in CECP for 7 years and only accessible to IT production and development staff. • Portal Trade information is stored in the Portal for 90 days and is accessible by TCPs during that time.
A Federal Records Centre	N/A
Non federal institutions and private sector	
▪ Provincial Government	N/A
▪ Municipal Government	N/A
▪ Aboriginal Government / Council	N/A
▪ Organization of a Foreign State	N/A
▪ International Organization	N/A
Private Sector	
▪ Located in Canada and Canadian Owned	Highway and rail carriers, freight

	forwarders in all modes, and service providers retain records of submitted information. The regulated retention periods are 3 + 1 year for the private sector for cargo related information.
<ul style="list-style-type: none"> Located in Canada and Foreign Owned 	Highway and rail carriers, freight forwarders in all modes, and service providers retain records of submitted information. The regulated retention periods are 3 + 1 year for the private sector for cargo related information.
<ul style="list-style-type: none"> Located abroad and Canadian Owned 	Highway and rail carriers, freight forwarders in all modes, and service providers retain records of submitted information. The regulated retention periods are 3 + 1 year for the private sector for cargo related information.
<ul style="list-style-type: none"> Located abroad and Foreign Owned 	Highway and rail carriers, freight forwarders in all modes, and service providers retain records of submitted information. The regulated retention periods are 3 + 1 year for the private sector for cargo related information.

4.6 Other Possible Considerations

Identify the areas, groups and individuals who access and handle the personal information:

The CBSA program or activity:		
Identify Groups or Areas / or Divisions	Positions who have access or use the personal information (where appropriate)	Geographical Location
Regional Commercial Operations	Border Services Officers Clerical Support Staff	Commercial Ports across Canada
National Targeting Centre	Targeting Officers	Ottawa
IT CECF	IT Officers	HQ - Ottawa
IT Administration	IT Officers	HQ - Ottawa
IT Development	IT Officers	HQ - Ottawa
IT Analysis	IT Officers	HQ - Ottawa
IT Testing	IT Officers	HQ - Ottawa
IT Maintenance	IT Officers	HQ - Ottawa
IT ACROSS	IT Officers	HQ - Ottawa
eManifest Technical Support Unit	Technical Support Officers	HQ - Ottawa
eManifest project Teams	Program Officers Managers Consultants	HQ - Ottawa
Compliance Verification	Program Officers	HQ - Ottawa
Electronic Commerce Unit (ECU)	Technical Support Officers	HQ Ottawa
ACI Policy Unit (Compliance Monitoring)	Program Officers	HQ - Ottawa
Pre-Border Programs	Programs Officers	HQ - Ottawa
Border programs	Programs Officers	HQ - Ottawa
Business Intelligence and Risk Assessment Division	Programs Officers Consultants	HQ - Ottawa
eManifest Business Design and Development	Programs Officers Consultants	HQ - Ottawa
eManifest Stakeholder Consultations and Implementation	Programs Officers Consultants	HQ - Ottawa
Reporting Programs	Intelligence Officers	HQ/Regions
Intelligence Operations	Intelligence Officers/Analysts	HQ/ Regions
Enforcement	Enforcement Officers/Analysts	HQ/Regions
Business Intelligence and Risk	Project Officers	HQ

Assessment Division	Consultants	
Other federal government Institution responsible for program or activity: (one table per institution):		
N/A		
Non Federal Institution or Private Sector: 'name': (one table per institution)		
N/A		

SECTION 5 - PRIVACY COMPLIANCE ANALYSIS

1. Legal Authority For Collection Of Personal Information

Has a legal authority been identified for the collection of personal information for this program or activity?

Statutory reference: Section 4 of Privacy Act (Section 4 has been interpreted to mean that a legal authority must be established for a collection of personal information, but section 4 does not provide legal authority for such a collection).

Policy reference: Section 6.2.6 of Directive on Privacy Practices

Yes

- 1.1 ☒ Specify the legal authority and briefly explain its connection to the program or activity or how it permits the collection of the personal information:

Section 12.1 Customs Act

12.1 (1) Before the arrival of a conveyance in Canada, the owner or person in charge of a conveyance who is prescribed or any other prescribed person shall give the Agency prescribed information about the conveyance and the persons and goods on board or expected to be on board the conveyance.

(2) A person who is required to provide information under subsection (1) shall hold a valid carrier code unless they are exempt.

3) An application for a carrier code shall be made in the prescribed form with the prescribed information.

(4) The Minister shall issue a carrier code to a person who applies for it if the application meets the requirements referred to in subsection (3) and the Minister is satisfied that the

prescribed requirements and conditions for the carrier code to be issued have been met.

(5) The Minister may, subject to the regulations, suspend, cancel or reinstate a carrier code.

(6) The Minister may issue a notification to any person who provides information under subsection (1) to require the person to take any specified measure with respect to the information.

(7) The person to whom a notification is issued shall comply with the notification.

(8) The Governor in Council may make regulations for the purposes of this section, including regulations

(a) respecting the information that must be given under subsection (1);

(b) prescribing the persons or classes of persons who must give the information under subsection (1);

(c) respecting the circumstances in which the information must be given under subsection (1);

(d) respecting the time within which and the manner in which the information must be given under subsection (1);

(e) regarding the requirements and conditions that are to be met before a carrier code may be issued;

(f) regarding the persons or classes of persons who are exempt from holding a valid carrier code; and

(g) regarding the manner and circumstances in which a carrier code may be suspended, cancelled or reinstated.

Section 107.1 Customs Act

107.1 (1) The Minister may, under prescribed circumstances and conditions, require any prescribed person or prescribed class of persons to provide, or to provide access to, within the prescribed time and in the prescribed manner, prescribed information about any person on board or expected to be on board a conveyance.

Section 7.1 Customs Act

Obligation to provide accurate information

7.1 Any information provided to an officer in the administration or enforcement of this Act, the Customs Tariff or the Special Import Measures Act or under any other Act of Parliament that prohibits, controls or regulates the importation or exportation of goods, shall be true, accurate and complete.

The following authorities are in progress and will be in place prior to us mandating the collection of the information:

Reporting of Imported Goods Regulations

Proposed coming into force date – Summer/Fall 2014:

The proposed amendments require highway and rail carriers to provide cargo and conveyance information electronically to the CBSA before the conveyance arrives at the border. This requirement gives the CBSA time to assess risks and make informed determinations without creating significant delays to the travel time of the carrier. Additionally, rail, air and marine carriers will be required to provide an electronic arrival message to the CBSA upon arrival in Canada. The proposed regulatory amendments also specify the terms and conditions for obtaining a carrier code and the grounds for suspending or cancelling a carrier code. The amendments also stipulate that carriers and freight forwarders be required to keep the information regarding their carrier codes up to date and are required to inform the CBSA of certain changes. The carrier code requirements ensure that carriers and freight forwarders are accountable for the advance commercial information they provide to the CBSA. This includes the additional requirements for freight forwarders to transmit electronic house bill information for consolidated cargo in all modes.

The following regulations are also being updated:

Customs Sufferance Warehouse Regulations:

Proposed coming into force date - Summer/Fall 2014:

Under the proposed amendments, Sufferance Warehouse Operators will be required to acknowledge for the receipt of goods in their warehouse through an electronic arrival message.

Transportation of Goods Regulations:

Proposed coming into force dates - Summer/Fall 2014:

Currently, commercial carriers are required to keep records relating to all commercial goods transported by it to Canada for three (3) years plus the current year. Carriers are required to keep paper records about cargo that has been imported into Canada on previous trips (e.g., who shipped the goods and where the goods were delivered). Under the proposed amendments, these record keeping requirements will be extended to freight forwarders as well as include all information provided to and received from the CBSA electronically for three (3) years plus the current year.

Designated Provisions (Customs) Regulations:

Proposed coming into force dates - Summer/Fall 2014:

Currently, monetary penalties are not assessed by the CBSA against air and marine carriers regarding existing Advance Commercial Information (ACI) requirements. *The Designated Provisions (Customs) Regulations* will be amended to designate new subsections 12.1(2) and (7) of the Customs Act and new sections of the *Reporting of Imported Goods Regulations*. Together with existing designated provisions, this would allow for the CBSA to assess administrative monetary penalties for non-compliance in the following situations:

- failing to provide pre-arrival cargo and conveyance information;
- failing to provide cargo and conveyance information electronically or within the prescribed timeframes;
- failing to notify the CBSA without delay of a change to the advance commercial information provided;
- failing to comply with a notification issued by the CBSA regarding commercial goods destined for Canada; and
- failing to hold a valid carrier code.

The new administrative monetary penalties will conform to the existing standards of the CBSA's AMPS program, which is based on uniform systematic criteria reflecting the risk and impact of each contravention.

1.3 ☒ Is the personal information collected directly related to an operating program or activity?

Details: Yes, this personal information is used for risk assessment in order to determine admissibility.

→ Continue to Question 2

No

1.3 ☐ If there is no legal authority for the collection of personal information, it cannot be collected. Please consult your legal advisor to determine if there is authority to proceed with the program or activity. ****The PIA process must not continue without this key information.****

2. Necessity To Collect Personal Information

Is each element and sub-element of personal information collected or to be collected necessary to administer the program or activity?

Statutory reference: Section 4 of *Privacy Act*

Policy reference: Sections 6.1.1, 6.1.3, 6.1.4, 6.2.7 and 6.2.8 of *Directive on Privacy Practices*

YES

2.1 ☒ Ensure that all personal information necessary to administer the program or activity is listed in the relevant **PIB**.

2.2 ☐ AND, implement controls and procedures to ensure the CBSA does not collect more personal information than is necessary for the identified program or activity and that a continuing need exists for that information or its collection.

Please note: Unsolicited crew information is not necessary for the program and in fact is not used for the program. Unfortunately we have no way of stopping this information from

being sent, however, we can ensure it isn't used and control the access.

2.3 Are secondary uses contemplated for the information collected?

☐ YES ☒ NO (*Continue to Question 3*)

2.3.2 If yes, is there authority for the use or disclosure of the personal information?

****Please ensure that the Legal Authority identified above allows for all uses and disclosures of the personal information.****

☐ YES ☐ NO

→ *Continue to Question 3*

NO

2.4 ☐ Review the proposed elements and sub-elements of personal information outlined in “*Section 3 – Analysis of Personal Information Elements*” to identify those that are “necessary” and not merely useful. Document any changes.

3. Authority For the Collection, Use or Disclosure Of the Social Insurance Number

Is the collection of the Social Insurance Number (SIN) necessary to administer the program or activity?

Statutory reference: Section 4 of *Privacy Act*

Policy reference: Section 6.2.13 of *Policy on Privacy Protection* and sections 6.1.1 and 6.2 to 6.4 of *Directive on Social Insurance Number*

Also see “Guidance for Preparing Information-Sharing agreements Involving Personal Information” and “Taking Privacy into Account Before making Contracting Decisions”

YES

3.1 ☐ Collection of the SIN must be in compliance with the *Directive on Social Insurance Number* (please check all appropriate boxes below):

3.2 ☐ State legal authority for collecting the SIN:

OR, in the absence of a legal authority to collect the SIN:

3.3 ☐ Establish explicit authority through legislative amendment(s).

3.4 ☐ Establish legal authority as outlined in the *Directive on Social Insurance Number*.

AND, if disclosure of the SIN by the CBSA is to occur on a routine or systematic basis

3.4.1 ☐ to another federal institution that is authorized to collect it, or to another level of

government, establish an agreement or arrangement that includes specific provisions to limit the use of the SIN.

3.4.2 ☐ to a contractor or other external service provider, establish a contract that includes specific provisions to limit the use of the SIN.

3.5 ☐ AND, ensure that the relevant **PIB** for the program or activity states the authority under which the SIN is collected and the purpose for which it is used.

→ Continue to Question 4

NO

3.6 ☒ The SIN is not necessary and it will not be collected, used or disclosed to administer the program or activity.

→ Continue to Question 4

4. Direct Collection - Notification and Consent (as appropriate)

Is personal information collected directly from the individual to whom it relates?

Statutory reference: Sections 4 and 5 of *Privacy Act*

Policy reference: Sections 6.1.1, 6.2.6 and 6.2.9 to 6.2.13 of *Directive on Privacy Practices* and section 6.1.2 and 6.4.1 of *Directive on Social Insurance Number*

YES – for Registration Information only, Not for Trade information

4.1 ☒ A “**Privacy Notice**” (adapted for either verbal or written communications) must be provided to the individual at the time of collection and it must include the following elements:

- a) The purpose and authority for the collection
- b) Any uses or disclosures that are consistent with the original purpose.
- c) Any uses or disclosures that are not related to the original purpose
- d) Any legal or administrative consequences for refusing to provide the personal information
- e) That the "individual to whom the information relates" has rights of access to, correction of and protection of personal information under the *Privacy Act*.
- f) A reference to the **PIB** for the program or activity
- g) Why the SIN is collected, how it will be used and the consequence of not providing it.

AND, add a “**Consent Statement**” to the “**Privacy Notice**” as appropriate, if the personal information is to be used or disclosed for a purpose other than the original purpose (**Secondary Use**) or a consistent use, or, to authorize indirect collection of personal information.

4.2 ☐ The “**Consent Statement**” must include the following elements:

- a) The purpose of the consent and the specific personal information involved.

b) In the case of indirect collections, the sources that will be asked to provide the information.

c) Uses and disclosures that are not consistent with the original purpose of the collection and for which consent is being sought.

d) Any consequences that may result from withholding consent.

e) Any alternatives to providing consent

- 4.3 ☐ AND, implement controls and procedures to ensure that the CBSA keeps a record documenting whether or not an individual provided consent when it was sought, including a record documenting any withdrawal of consent when applicable.

Additional Consent Considerations (s. 77(1)(m) of the *Privacy Act*):

- ☐ Standards and mechanisms are in place to ensure that the individual has capacity to give consent.

→ Continue to Question 5

NO (For Third Party Trade information only)

- 4.4 ☒ The personal information necessary for the program or activity is not collected directly from the individual. It is collected indirectly, for example, from another program within the CBSA, or from another institution, government or third party.

→ Continue to Question 5

5. Indirect Collection - Consent or Authority Under Sec. 10 of Privacy Regulations

Is personal information collected indirectly from another source with the informed consent of the individual to whom it relates, or from a person authorized to act on behalf of the individual pursuant to section 10 of the Privacy Regulations?

Statutory reference: Sections 4 and 5 of *Privacy Act* and section 10 of *Privacy Regulations*

Policy reference: Sections 6.1.1, 6.2.6 and 6.2.9 to 6.2.13 of *Directive on Privacy Practices* and sections 6.1.2 and 6.4.1 of the *Directive on Social Insurance Number*

YES

- 5.1 ☒ The notice and consent requirements stated at Question 4 apply. Please provide the "**Privacy Notice**" and/or "**Consent Statement**" below:
- 5.2 ☐ AND, implement controls and procedures to ensure the CBSA keeps a record documenting whether or not an individual provided consent when it was sought, including a record documenting any withdrawal of consent when applicable.

In our privacy notice which TCPs must accept, we are advising them to show the notice to the third parties they deal with. We cannot manage this because we do not know who the third parties are until the trade document arrives, also the volumes would be too high to manage.

- 5.3 ☐ AND, if information is being collected from persons authorized to act on behalf of minors, incompetents or individuals who have been deceased for less than 20 years, implement appropriate mechanisms to ensure that such persons are authorized to act on behalf of individuals who do not have the capacity to provide consent.

→ Continue to Question 6

NO

- 5.4 ☐ → Continue to Question 6

6. Indirect Collection - Without Notification and Consent

Is personal information collected from another source without notice to or consent from the individual to whom the information relates?

Statutory reference: Sections 4, 5, 7 and 8 of *Privacy Act* and section 10 of *Privacy Regulations*

Policy reference: Sections 6.2.6 and 6.2.9 to 6.2.13 of *Directive on Privacy Practices*, section 6.2.15 of the *Policy on Privacy Protection* and sections 6.3.2 and 6.3.3 of *Directive on Privacy Impact Assessment*

YES

- 6.1 ☐ Where information is collected indirectly under any of the following circumstances without notice to, or consent from, the individual to whom it relates, please check the applicable boxes and explain as requested:

- ☐ a) The collection is a result of a disclosure to the CBSA under subsection 8(2) of the *Privacy Act*. State the applicable paragraph(s) of subsection 8(2) and provide a brief explanation for each:

Details:

- ☐ b) Direct notification of the individual might result in the collection of inaccurate information, or might defeat the purpose or prejudice the use for which the information is collected. Briefly explain why notice is not provided:

Details:

- ☐ c) The information involved in the program or activity is to be used solely for a non-administrative purpose in which no decisions are made about the individuals to whom the information relates.

- 6.2 ☐ AND, if any of the circumstances in a) b) or c) is applicable, ensure that it is reflected in the relevant **PIB**.

- 6.3 ☐ AND, if the information is to be used solely for a non-administrative purpose (box c above

has been checked), ensure that the requirements under sections 6.3.2 and 6.3.3 of the *Directive on Privacy Impact Assessment* have been met, and that the decision of the official responsible for section 10 of the *Privacy Act* to proceed with a CBSA PIA for the program or activity has been adequately documented in the description of the program or activity in "Section 1 - Overview and PIA Initiation" of the CBSA PIA.

- 6.4 ☐ OR, if none of the circumstances in a) b) or c) is applicable, then the personal information must be collected directly from the individual, or indirectly with the consent of the individual. Please review the responses to Questions 4 and 5 and ensure that the "**Privacy Notice**" or the "**Consent Statement**" includes all of the required elements within Question 4.

→ Continue to Question 7

NO

- 6.5 ☒ All personal information is collected directly from the individual to whom it relates, or from another source with notice to, or consent from, the individual or a person authorized to act on behalf of the individual (see Questions 4 and 5 above). → Continue to Question 7

7. Retention and Disposal of Personal Information

Has Library and Archives Canada approved a records retention and disposal schedule that applies to the personal information?

Statutory reference: Section 12 of *Library and Archives Canada Act*, sections 6, 10 and 11 of *Privacy Act* and section 4 of *Privacy Regulations*

Policy reference: Sections 6.1.3, 6.2.11 to 6.2.13 and 6.2.23 of *Directive on Privacy Practices*

YES

- 7.1 ☐ Please identify the Record Disposition Authority (RDA) and describe the retention and disposal schedule:

Details: An RDA is currently in development. It is expected to be completed by March, 2014. The retention period for commercial information is expected to be 15 years.

- 7.2 ☐ AND, implement controls and procedures to ensure that personal information used to make a decision that directly affects an individual will be retained for a minimum of two years after the last administrative action or, where a request for access to the information has been received, until such time as the individual has had the opportunity to exercise all his/her rights under the Act.
- 7.3 ☐ AND, if the CBSA intends to dispose of personal information that has been used for an administrative purpose prior to the expiration of the two-year minimum retention standard established by the *Privacy Regulations*, it must obtain the consent of the individual to whom the information relates before doing so.
- 7.4 ☐ AND, the CBSA must cite the RDA number, the retention period and the disposition standards for the personal information in the relevant **PIB**.

→ Continue to Question 8

NO

7.5 ☐ Provide a Records Disposition Submission to Library and Archives Canada describing the records containing the personal information for which the institution requires a RDA.

7.6 ☐ AND, obtain a RDA from Library and Archives Canada to allow the CBSA, under certain conditions, to dispose of records that no longer have operational utility for the program or activity.

This is in progress by Information Management and will be complete by end of fiscal (March 2014).

7.7 ☒ AND, ensure that all the other applicable requirements listed under "YES" at Question 7 are met.

→ Continue to Question 8

8. Accuracy Of Personal Information

Will measures be adopted to ensure that personal information used by the CBSA for an administrative purpose is as accurate, up-to-date and complete as possible?

Statutory reference: Sections 6, 10 and 11 of *Privacy Act* and sections 10 and 11 of *Privacy Regulations*

Policy reference: Sections 6.1.1 and 6.2.9 to 6.2.16 of *Directive on Privacy Practices*

YES

8.1 ☒ Please check any of the following measures that will be adopted to ensure accuracy of the personal information and provide details as requested:

8.1.1 ☒ Personal information will be collected directly from the individual to whom it relates or it will be validated with the individual or a person authorized to act on behalf of the individual.

8.1.2 ☒ A information-matching process will be used to verify the accuracy of personal information against a "reliable source" (within or outside the CBSA) where this is authorized, or where consent was obtained.

Details:

As CBSA receives the Shared Secret applications from carriers with existing carrier codes, the information will be verified against all the information that is contained in the existing "Daryyl" database, as well as associated carrier application documents that can be accessed through Daryyl (i.e.: Carrier Code Application).

As per the Portal Terms and Conditions, the Account Owner will be responsible for keeping the associated Business Account information with the CBSA up-to-date and must notify the CBSA immediately upon any change to the business name, addresses and/or contact information. The Account Owner must notify the CBSA immediately upon any change to its corporate structure or organization under federal or provincial corporations or companies legislation which may result in the CBSA requesting that

it make a new application for a new Business Account

- 8.1.3 ☐ In cases where direct collection or consent is not feasible, the CBSA will obtain information from trusted sources (public or private) and verify accuracy against existing personal information before use.

Details:

- 8.1.4 ☒ Technological methods will be used to identify errors and discrepancies.

Details:

Address fields for which codes are used such as provinces or countries will be verified against information tables in the ACROSS system. The syntax (alpha numeric and field size) on these fields will also be checked and the message will be rejected back to the client for amendment if it is incorrect.

- 8.1.5 ☐ Other

Specify:

- 8.2 ☐ AND, if measures are adopted other than "*direct collection or validation with the individual or with a person authorized to act on behalf of the individual*", the CBSA must implement appropriate controls and procedures to ensure that:

- a) the technique(s) and the specific source(s) used to validate or update the personal information are documented;
- b) individuals are given the opportunity, whenever possible, to request correction of any inaccurate personal information before the information is used in a decision-making process that affects them;
- c) personal information can only be modified or corrected by those within the CBSA who have the authority to do so;
- d) when personal information is corrected or annotated, the record of personal information indicates the date of the last correction or annotation and the source of the information used to make the correction or annotation; and
- d) when personal information is corrected or annotated, other authorized holders of the information are notified about the correction or annotation and that all copies of the information in the possession of the CBSA are corrected / annotated.

- 8.3 ☐ AND, if appropriate, ensure that the "**Privacy Notice**" or "**Consent Statement**" and the relevant **PIB** are amended to identify the information-matching activity including the source(s).

→ Continue to Question 9

NO

- 8.4 ☒

Explain why such measures will not be adopted: Unsolicited crew information will not be verified because it will not be used. It is trapped at the earliest point in the transmission chain and is not sent to ACROSS for validation with the rest of the conveyance submission. Instead crew information will be archived on tape for 7 years. In Build 3 of eManifest, crew information will be mandatory. At that time it will be verified and risk assessed with the rest of the conveyance submission.

→ Continue to next Question 9

9. Use of Personal Information

Will the personal information collected for the program or activity be used solely for the original purpose for which it was obtained or compiled, a use consistent with that purpose, or a purpose for which the information was disclosed to the institution pursuant to subsection 8(2) of the Privacy Act?

Statutory reference: Sections 5 and 7 to 11 of *Privacy Act*

Policy reference: Sections 6.1.1, 6.1.9, 6.2.9 to 6.2.13 and 6.2.17 of *Directive on Privacy Practices*, section 6.2.15 of *Policy on Privacy Protection* and Section IV of Appendix C of *Directive on Privacy Impact Assessment*

YES

- 9.1 ☒ Implement controls and procedures to ensure that access to the personal information for such purposes will be limited to authorized individuals who need to know the information to perform their official duties.

ACROSS access is granted by manager approval, only to people who need it for their work.

EDWE has access controls in place to ensure that a user is only afforded the ability which relates only to his/her specific position. For example, an individual must first seek approval from the Functional Authority of the EDWE (Director), obtain a license for a particular toolset (Cognos), then is granted access through a user ID and password only to the tables/information that were specified in the initial request. Also, the information therein is partitioned to facilitate the availability of divergent information views, which denote specific sets of information. The PAA only allows 30 Portal Administrators to review and access all user profiles and preferences, for the purpose of ensuring the health of the Portal and assist users, approximately

- 9.2 ☒ AND, ensure that the “Information Flow Diagram” or “Information Flow Tables” completed for “Section 4 – Flow of Personal Information” of the CBSA PIA identify the areas, groups and individuals (e.g., the positions) within the CBSA who have a need-to-know to access to or handle the personal information, including their geographical location and where the personal information will be stored or retained.
- 9.3 ☒ AND, if the purposes for which the personal information is used includes any use(s) of the information for a non-administrative purpose, (such as research, statistical, audit and

evaluation purposes) the CBSA will adhere to the requirements and principles in the **CBSA Privacy Protocol For Non-Administrative Purposes** (2012), in accordance with section 6.2.15 of the *Policy on Privacy Protection*, to address any impact that such non-administrative uses may have on privacy.

→ *Continue to Question 10*

NO

- 9.4 ☐ Identify below any other uses of the personal information, in other words, any routine uses that are not directly related to the purpose of the collection, or, which are not consistent with that purpose or for which the information was disclosed to the CBSA pursuant to subsection 8(2) of the *Privacy Act*:

Detail :

- 9.5 ☐ AND, ensure that these other uses are reflected in the relevant **PIB**.

- 9.6 ☐ AND, include a description of these other uses in the “**Privacy Notice**” or “**Consent Statement**”, as appropriate,

- ☐ AND, ensure the all the other applicable requirements listed under “**YES**” at Question 9 are met.

→ *Continue to Question 10*

10. Disclosures Directly Related to the Administration of the Program or Activity

Will personal information be disclosed for purposes directly related to the administration of the program or activity?

Statutory reference: Sections 5 and 8 to 11 of *Privacy Act*.

Policy reference: Sections 6.2.10, 6.2.11 and 6.2.13 of *Policy on Privacy Protection*, sections 6.2.1 to 6.2.3 of *Directive on Social Insurance Number*, sections 6.1.9, 6.2.9 to 6.2.13 and 6.2.15 to 6.2.20 of *Directive on Privacy Practices* and section IV of Appendix “C” of *Directive on Privacy Impact Assessment*)

Also see ”Guidance for Preparing Information-Sharing agreements Involving Personal Information” and “Taking Privacy into Account Before making Contracting Decisions

YES

- 10.1 ☒ Please check all applicable boxes below and, for each disclosure, identify the name of the organization or third party to which personal information will be disclosed. If it is disclosed within the CBSA, please identify the branch and the program or activity.

- 10.1.1 ☒ Within the CBSA for another program or activity

Detail:

Commercial Operations, ACI Policy Unit (Compliance Monitoring), Intelligence,

Criminal Investigations, Programs Branch

10.1.2 ☒ Other federal government institutions

Detail: Information may be shared with Other Government Departments.

10.1.3 ☐ Provincial, territorial or municipal governments institutions

Detail:

10.1.4 ☐ Foreign government institutions and entities thereof

Detail: U.S. CBP.

10.1.5 ☐ International organizations

Detail:

10.1.6 ☒ The private sector (e.g., contractor or other external service provider)

Detail:

The CBSA will not share this information with the private sector. However, when a freight forwarder sends their house bill information to the CBSA they can elect to have it automatically sent to a freight forwarder, carrier, broker or warehouse operator through the Manifest Forward notice that the CBSA offers.

When a Compliance Monitoring Officer (ACI Policy Unit) determines that a delivery address submitted by a TCP is incorrect, they send it back to the carrier. However this information is only being sent to the person from whom it was received. It is not being shared with a different TCP.

10.1.7 ☐ Other

Detail :

10.2 ☒ AND, ensure that:

- a) any such disclosure is made in compliance with section 8 of the *Privacy Act*, which allows disclosures of personal information with consent of the individual to whom the information relates (subsection 8(1)) or without consent in certain and limited circumstances pursuant to subsection 8(2) of the Act;
- b) only personal information elements that are necessary for the intended purpose are disclosed;

- c) the organization or third party receiving the personal information is authorized to do so;
- d) administrative, physical and technical safeguards appropriate to the sensitivity of the information will be applied to protect the information during and after its transmission (see Question 15);
- e) the organization or third party to which the personal information will be disclosed for the administration of the program or activity are identified in the “Consistent Use” section in the relevant **PIB** in *CBSA Info Source*, including the specific purpose of the disclosure; the “**Privacy Notice**” or “**Consent Statement**” describes any disclosures of information; and,
- f) the “Information Flow Diagram” or “Information Flow Tables” completed in “*Section 4 – Flow of Personal Information*” of the CBSA PIA include details on the disclosed personal information:

10.3 ☒ AND, any disclosure of personal information to another federal institution or outside the Government of Canada is governed by a formal agreement or arrangement (e.g., a Memorandum of Understanding, an accord, a contractual arrangement, etc.) to ensure that appropriate privacy protection clauses are included, and, where applicable, include provisions for inter-jurisdictional or transborder flows of personal information. Such clauses must cover the following topics:

- a) Control over personal information, where appropriate.
- b) Limitations on the collection, retention, use and disclosure of personal information.
- c) Measures (administrative, technical and physical) to protect the integrity and confidentiality of personal information.
- d) Measures governing the disposition of the personal information, where relevant
- e) Measures to ensure or verify that the personal information is only used for the purposes related to the agreement, arrangement or contract.
- f) Obligations are to be extended to other parties such as subcontractors.

→ *Continue to Question 11*

NO

10.4 ☐ There is no disclosure of personal information within or outside the institution for purposes that are directly related to the administration of the program or activity.

→ *Continue to Question 11*

11. Accounting For New Uses or Disclosures Not Reported in CBSA Info Source

Will controls and procedures be implemented to account for any new use or disclosure of the personal information that is not included in the relevant **PIB** published in CBSA Info Source?

Statutory reference: Sections 7 to 11 of *Privacy Act* and section 4 of *Privacy Regulations*

Policy reference: Sections 6.1.9 and 6.2.2 of *Directive on Privacy Practices*

YES

11.1 ☒ Appropriate controls and procedures have been or will be implemented to ensure that:

- a) the head of the institution (The ATI and Privacy Director) or the appropriate delegate is notified about any new use or disclosure of personal information that is not reflected in the **PIB** description published in *CBSA Info Source*;

The eManifest project area will call or email ATIP to inform them of any new use or disclosure not reflected in the PIB.

- b) the consent of the individual to whom the information relates is obtained in writing, as appropriate, prior to any new use of the information for an administrative purpose that is not reflected in the relevant **PIB** published in *CBSA Info Source*, unless the new use is considered to be consistent with the purpose for which the personal information was obtained or compiled and the Privacy Commissioner is notified, by the CBSA ATI and Privacy Director, forthwith regarding the new consistent use;
- c) except as permitted under subsection 8(2) of the *Privacy Act*, any disclosure of personal information for a purpose that is not reflected in the relevant **PIB** published in *CBSA Info Source* will only be made with the consent of the individual to whom the information relates;
- d) a record is kept for any new use or disclosure of personal information not described in the relevant **PIB** published in *CBSA Info Source*, and that this record is stored with the personal information to which it relates and retained for a minimum period of two years following such a use or disclosure;
- e) if the information is disclosed to a federal investigative body under paragraph 8(2)(e) of the *Privacy Act*, the record of disclosure will be kept in a separate PIB for a period of two years where it will be available to the Privacy Commissioner for review upon request;
- f) the Privacy Commissioner is notified, by the CBSA ATI and Privacy Director, forthwith, as required under subsection 9(4) of the Act, of any new use or disclosure that is consistent with the purpose for which the information was obtained or compiled, but which is not reflected in the relevant **PIB** published in *CBSA Info Source*;
- g) the relevant **PIB** is amended in time for the next edition of *CBSA Info Source* to include any new use(s) or disclosure(s) that are consistent with the purpose for which the information was obtained or compiled, as well as any routine use(s) or disclosure(s) that do not fall within the categories of purpose of collection or consistent use; and
- h) the Privacy Commissioner is notified, by the ATI and Privacy Director, prior to or forthwith, as required under subsection 8(5) of the Act, about any disclosures made or to be made in the public interest or in the interest of the individual to whom the information relates.
- i) Other

Detail : A PIB has been created for eManifest which contains all of this information. It will be registered with TBS when the PIA is submitted.

→ Continue to Question 12

NO

11.2 ☐ Please explain why such controls and procedures will not be implemented

Detail:

→ Continue to Question 12

12. Safeguards - Statement Of Sensitivity

Has a Statement of Sensitivity (SoS) or similar analysis been completed to assess the degree of sensitivity of the personal information to be collected and retained for the program or activity?

Statutory reference: Sections 7 and 8 of *Privacy Act*.

Policy reference: Appendix C of *Directive on Privacy Impact Assessment* and sections 6.2.17 to 6.2.21 of *Directive on Privacy Practices, Policy on Government Security, Operational Security Standard: Management of Information Technology Security (MITS)*

YES

12.1 ☒ The information contained in the SoS or similar analysis has been taken into account when assessing the level of risks to privacy in "Section 2 - Risk Area Identification and Categorization" of the CBSA PIA.

→ Continue to Question 13

NO

12.2 ☐ Please explain why a SoS or similar analysis was not considered necessary to assess the sensitivity of the information.

Detail :

→ Continue to Question 13

13. Safeguards - Threat and Risk Assessment

Has a Threat and Risk Assessment (TRA) or a similar security assessment been completed for the program or activity?

Statutory reference: Sections 7 and 8 of *Privacy Act*.

Policy reference: Appendix C of *Directive on Privacy Impact Assessment* and sections 6.2.17 to 6.2.21 of *Directive on Privacy Practices, Policy on Government Security,*

Operational Security Standard: Management of Information Technology Security (MITS)

YES

- 13.1 ☒ Reference the title of the TRA or other security assessment in “*Section 6 – Supplementary Documents List*” and provide a brief synopsis of the assessment in the space below:

- 13.2 ☒ AND, obtain assurances from the officials responsible for the program or activity that the measures recommended in the assessment have been implemented to ensure the confidentiality, availability and integrity of the personal information.
- 13.3 ☒ AND, ensure that any residual risks to personal information are known and accepted by the executive or senior official responsible for the program or activity and the Head or delegated authority for the *Privacy Act*. (ATI and Privacy Director)

→ *Continue to Question 14*

NO

- 13.4 ☐ If a TRA or similar security assessment is underway, simply reference that fact in the space below and indicate when it is likely to be completed. If there is no intent to complete one,

please explain.

Detail :

→ Continue to Question 14

14. Safeguards - Administrative, Physical and Technical

Please identify below any administrative, physical and technical safeguards in place, or to be implemented, for this program or activity to ensure the confidentiality, availability and integrity of the personal information.

Statutory reference: Sections 7 and 8 of Privacy Act

Policy reference: Appendix C of Directive on Privacy Impact Assessment and sections 6.2.17 to 6.2.21 of Directive on Privacy Practices, Policy on Government Security, Operational Security Standard: Management of Information Technology Security (MITS)

Please check all that apply, including safeguards identified by the TRA or similar security assessment.

14.1 Administrative safeguards

- ☒ Internal security and privacy policies and procedures
- ☒ Staff training on privacy and the protection of personal information
- ☒ Screening and security checks of employees
- ☒ Appropriate security levels for employees who will have access to personal information
- ☒ Contingency plans and documented procedures in place to identify and respond to security and privacy breaches, and to communicate security violations to the information subject, law enforcement authorities and relevant program managers
- ☐ Regular monitoring of users' security practices
- ☒ Methods to ensure that only authorized personnel who need to know have access to personal information
- ☐ Other

Detail:

Employees must have security checks. In order to access the systems referenced in this document (with the exception of DARRYL), they must obtain approval from their manager and are then given a user ID and password to access the system.

Staff are trained on privacy and the protection of information.

The EDWE has access controls in place to ensure a respective end-user is afforded the ability to view information which relates only to his/her specific position.

The agency has a privacy breach protocol which can be found at the following link:
http://atlas/cab-dgsi/messages/2013/csd-dsg/0620_eng.asp

14.2 Physical safeguards

- ☒ Restricted access areas
- ☐ Security guards
- ☒ Identification badges are worn by staff at all times
- ☒ After hours alarms and monitoring systems
- ☒ Locked filing cabinets
- ☐ Combination locks
- ☐ Safes
- ☐ Cipher locks
- ☒ Key cards
- ☐ Video surveillance (closed-circuit television)
- ☒ Secured server locations
- ☒ Backups secured off-site
- ☐ Other

Detail :

Information stored on tape at the CECF is stored in a locked room which only 12 people can access through sign-in and approval.

The ACROSS system can only be accessed through the CBSA network.

CECP, ACROSS, PAA, the Portal and EDWE is in a secure server location.

Employees need key cards to access all floors in CBSA buildings.

14.3 Technical safeguards

- ☒ Role-based user authorization and authentication
- ☐ Biometrics
- ☒ Passwords (minimum of 6 characters long, include alpha and numeric characters)
- ☒ Passwords are changed by users every 90 days and recently used passwords cannot be re-used)
- ☒ Password protected screensavers
- ☒ Session-time out security (automatically locks an account after a session has been idle for a specified amount of time)
- ☒ Firewalls
- ☒ Intrusion Detection System (IDS)
- ☒ Virtual Private Network (VPN)
- ☒ Encryption of sensitive information (PORTAL ONLY)
- ☐ Government of Canada Public Key Infrastructure Certificates (PKI)
- ☐ External Certificate Authority (CA)
- ☒ Audit trails

☐ Other

Detail:

Unsolicited crew information is not sent to the ACROSS system, but sole proprietor information collected as part of the cargo, conveyance and house bill information is sent to ACROSS. Both CECP and ACROSS are CBSA legacy systems not specific to eManifest. CECP will be replaced with the Multi-Enterprise Integration external communications platform (MEI) and the front end of ACROSS will be replaced with a new system. Both MEI and ACROSS's replacement will have read access audit trails.

The reporting environment of EDWE has read access audit trails.

Portal does track the specific information viewed by a user.

Portal Registration Information:

The Account Owner or Proxy Account Owner has control over which users are added to their business account. They have to obtain the URN, family name and email address from the user. The Account Owner enters these three information elements and then the eManifest Portal displays the matching first name, last name and email address of the associated user. Requiring a match on three information elements in order to add a user to the account prevents a user who has not provided their information to an Account Owner or Proxy Account from being added to the account.

The Account Owner/ Proxy Account Owner has access to first name, family name, email address, telephone number, telephone extension, URN, user role of each user in their business account. There is little risk involved with this as the user knows this information will be shared when he provides the Account Owner or Proxy Account with the initial 3 pieces of personal information.

→ Continue to Question 15

15. Technology and Privacy - Tracking Technologies

Will the information system(s) used to deliver the program or activity employ cookies or other

tracking technologies to collect personal information about users and their transactions?

Statutory reference: Sections 4 to 10 of the Privacy Act and section 4 of Privacy Regulations

Policy reference: Subsections 6.1.1, 6.1.3, 6.1.9, 6.2.9 to 6.2.13, 6.2.17 and 6.2.23 of Directive on Privacy Practices

YES

- 15.1 ☒ The specific tracking technologies to be used is adequately described under Part 6: Technology and Privacy of “*Section 2 – Risk Area Identification and Categorization*” of the CBSA PIA;
- 15.2 ☒ AND, the collection of any personal information using such technologies is reflected in the relevant **PIB** and in “*Section 3 – Analysis of Personal Information Elements*” of the CBSA PIA;
- 15.3 ☒ AND, the use of such technologies to collect information about users and their transactions is adequately reflected in the “**Privacy Notice**”;
- 15.4 ☒ AND, those responsible for implementing and using tracking technologies to collect personal information or who may have access to personal information collected through these methods are made aware of privacy and security policy requirements;
- 15.5 ☐ AND, where personal information collected through such tracking technologies is used to make a decision that directly affects the individual to whom the information relates, it will be retained for a minimum of two years after the last administrative action as required under the *Privacy Regulations*.

Cookies are not relied upon for tracking personal info about users. We use the ID and URN for the portal user for this.

→ Continue to Question 16

NO

- 15.6 ☐ Tracking technologies are not used to collect personal information about users.

→ Continue to Question 16

16. Technology and Privacy - Surveillance or Monitoring

Will the new or modified program or activity result in new or increased surveillance or monitoring of a targeted population?

Statutory reference: Sections 4 to 10 of *Privacy Act*, section 4 of *Privacy Regulations* and section 8 of the *Charter of Rights and Freedoms*

Policy reference: Subsections 6.1.1, 6.1.9, 6.2.9 to 6.2.13 and 6.2.17 of *Directive on Privacy Practices*

YES

- 16.1 ☐ Consult with your legal advisors to determine whether or not such surveillance or monitoring activities raise any issues relating to the *Charter of Rights and Freedoms*, the *Privacy Act* or

other applicable acts.

16.2 ☐ And, ensure the surveillance or monitoring method(s) to be used, the characteristic(s) of the targeted population and the scope of the surveillance or monitoring are adequately described under Part 6: Technology and Privacy of "*Section 2 – Risk Area Identification and Categorization*" of the CBSA PIA.

16.3 ☐ AND, any personal information collected or created as a result of such surveillance or monitoring is described in the relevant **PIB** and in *Section 3 – Analysis of Personal Information Elements* of the CBSA PIA.

16.4 ☐ AND, the collection or use of personal information through surveillance or monitoring is adequately reflected in the "**Privacy Notice**", unless such notification might result in the collection of inaccurate information or defeat the purpose or prejudice the use for which the personal information is collected.

☐ If notice about surveillance or monitoring will not be provided

Detail explain why:

16.5 ☐ AND, those responsible for implementing and using such surveillance or monitoring method(s) or who may have access to personal information collected or created through these methods are made aware of privacy and security policy requirements.

→ Continue to Question 17

NO

16.6 ☒ The new or modified program or activity will not result in surveillance or monitoring.

→ Continue to Question 17

17. Considerations Related to Compliance, Regulatory Investigation, Enforcement

Does the program or activity involve compliance/regulatory investigation or law enforcement, surveillance or intelligence gathering that targets specific individuals against whom penalties, criminal charges or sanctions may be applicable?

Statutory reference: Sections 4 to 10 of *Privacy Act*, section 4 of *Privacy Regulations* and section 8 of the *Charter of Rights and Freedoms*

Policy reference: Subsections 6.1.1, 6.1.9, 6.2.9 to 6.2.13 and 6.2.17 of *Directive on Privacy Practices*

YES

17.1 ☐ Consult with your legal advisors to determine whether or not the compliance/regulatory investigation or law enforcement activities raise any issues relating to the *Charter of Rights and Freedoms*, the *Privacy Act* or other applicable acts.

17.2 ☒ AND, identify the legislative authority and the specific regulatory or law enforcement purpose involved:

Detail: This information is part of existing compliance programs, the only difference is that the information is now being received electronically and in advance.

- 17.3 ☒ AND, if the legislative authority differs from the legal authority for the program or activity, ensure it is adequately reflected in the response to Question 1 of “*Section 5 – Privacy Compliance Analysis*” and in “*Section 1 – Overview and PIA Initiation*” of the CBSA PIA.
- 17.4 ☒ AND, any personal information collected or created as a result of such regulatory or criminal enforcement, surveillance or intelligence gathering program or activity is described in the relevant **PIB** and in “*Section 3 – Analysis of Personal Information Elements*” of the CBSA PIA.
- 17.5 ☒ AND, the collection or use of personal information through these compliance / regulatory investigation or enforcement activities is adequately reflected in the “**Privacy Notice**”, unless such notification might result in the collection of inaccurate information or defeat the purpose, or prejudice the use, for which the personal information is collected.
- ☐ If notice about the compliance/regulatory investigation or law enforcement activities will not be provided.

Details explain why:

NO

- 17.6 ☐ The program or activity does not involve the conduct of regulatory or criminal enforcement, surveillance or intelligence gathering.

SECTION 6 - Summary of Analysis and Recommendations

Identified Risk	Level of Risk	Mitigation
<p>Lack of necessity to collect crew information</p> <p>In the EDI highway conveyance submission, some TCPs (highway carriers and service providers) are submitting crew information even though the CBSA does not currently have the regulatory authority to collect this information and this information will not be necessary to a program activity until 2014. The risk is that the agency is collecting and storing personal information for which it has no authority.</p>	Low	<p>Crew information received electronically in the highway conveyance report is currently not used by CBSA. The crew information elements are being trapped at the earliest possible point in the transmission chain and retained and stored for 7 years off-line on archival information tapes. For legal reasons, all electronic trade data received by the CBSA must be stored on these tapes in the format it was received for 7 years.</p> <p>The Agency has published client documentation stating clients are not to submit crew information until required to do so.</p> <p>The Agency has taken steps to protect the crew information</p> <ul style="list-style-type: none"> - Crew information is archived after 14 days and not stored in the ACROSS database - While the information is in the operational environment CBSA employees are unable to search the content by individual fields - Limited access to archived tapes, locked rooms, sign-in logs, and requires authorization <p>For information integrity and completeness, no part of the received information, including crew information can be modified or deleted from the original transmission.</p>

		This same crew information is collected by existing CBSA programs in paper format upon arrival and the agency has regulations to support this.
Notification of Collection of Third Party Information Carriers, freight forwarders or service providers submit information on behalf of third parties to the CBSA. A PNS is provided to the carrier, freight forwarder or service provider at time of registration, which stipulates that the notice must be shared with all third parties. However, the CBSA has no way to verify that these third parties have been provided with the notice and therefore understand the use, retention and disclosure of their personal information.	Low	TCPs will be asked to share the CBSA's Privacy Notice Statement with these parties so that they are aware that their information is being sent to the CBSA, its uses, retention, and disclosure. Portal clients will view this PNS as part of the Portal terms and conditions, which they must accept when they sign onto the Portal. EDI clients will be provided with the PNS as part of the paper-based registration process. The PNS will also be emailed to clients as an electronic bulletin.

		See Risk #1 for additional info.
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SECTION 7 - SUPPLEMENTARY DOCUMENTS LIST

List all supplementary documents that support the conclusions of this CBSA Privacy Impact Assessment. For each document, cite the specific sections of the documents (subject, chapter, page, paragraph, etc.) that correspond with the CBSA PIA and link them to the PIA sections.

Document	Document Reference	PIA Reference
Privacy Notice Statement for the Portal	Whole Document	Section 4.1
Privacy Notice Statement EDI	Whole Document	Section 4.1
PPIA EDWE for the reporting environment	Whole Document	Section 13.1
SOS EDWE	Whole Document	Section 13.1
CCR SOS	Whole Document	Section 13.1
eManifest External Facing Web App- Build 1 SOS	Whole Document	Section 13.1
eManifest WURM SOS	Whole Document	Section 13.1
eManifest Commercial Trade Service - CTS SOS	Whole Document	Section 13.1
External WAM Service SOS	Whole Document	Section 13.1
eManifest CECF TRA Waiver	Whole Document	Section 13.1
CBSA Information Management Policy		
CBSA Privacy Breach Protocol		Section 14.1
Directives for the non-administrative Use of Personal Information	Whole Document	Whole Document
Service Standards	Email	Whole Email
Privacy Act Section 8 Disclosure of Information	Section 8	Section 8

SECTION 8 - FORMAL APPROVAL

The following signature represents a commitment to comply with sections 4 to 8 of the *Privacy Act* and the related privacy policy requirements outlined in the CBSA PIA as they relate to the administration of the identified program or activity.

 Signature of CBSA Vice President lead for program or activity

 Date

Note: Responsibility for sections 4 to 8 of the *Privacy Act* rests with all employees of government institutions that handle personal information. Officials who manage such programs and activities are responsible for ensuring that such requirements are implemented as part of the administration of the program or activity.

The following signature represents a commitment by the Head of the institution or his/her delegate(s) who is responsible for establishing personal information banks in accordance with section 10 of the *Privacy Act*.

 Signature of CBSA ATI and Privacy Director

 Date

Note: Under the *Privacy Act*, the Head or his/her delegate(s) is responsible for complying with legal and relevant privacy policy requirements related to the approval and registration of personal information banks



Canada Border
Services Agency

Agence des services
frontaliers du Canada



Predictive Analytics

Classification of Travellers by Risk Type

Targeting Data Analytics

2015-10-19

PROTECTION SERVICE INTEGRITY INTÉ
GRITÉ **PROTECTION** SERVICE INTEGRITY
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Canada

Outline

- ✓ What is **Predictive Analytics** and Why it is important
- ✓ Predictive Analytics' **structure**
- ✓ Example – **Classification of Travelers by Risk Type**
- ✓ **Methodology** – leveraging best practices
- ✓ Predictive **models** and their related **accuracy rates**
- ✓ Preliminary predictive model **results**
- ✓ Summary of the results
- ✓ Existing challenges

What is Predictive Analytics?

It is the process of discovering patterns in past behavior to predict the outcome of future cases

Drawing on a combination of

- Computer science
- Statistics
- Operations research

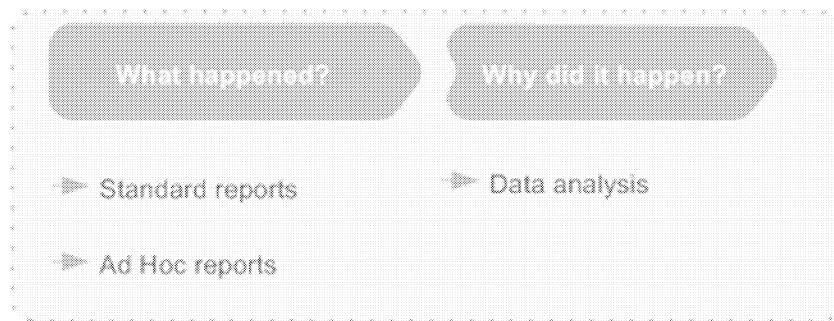
Benefits

- Drive smarter decisions by extracting actionable insights from the vast quantities of data
- Automate manual processes

Why it is important?

In the past – decision making process could be:

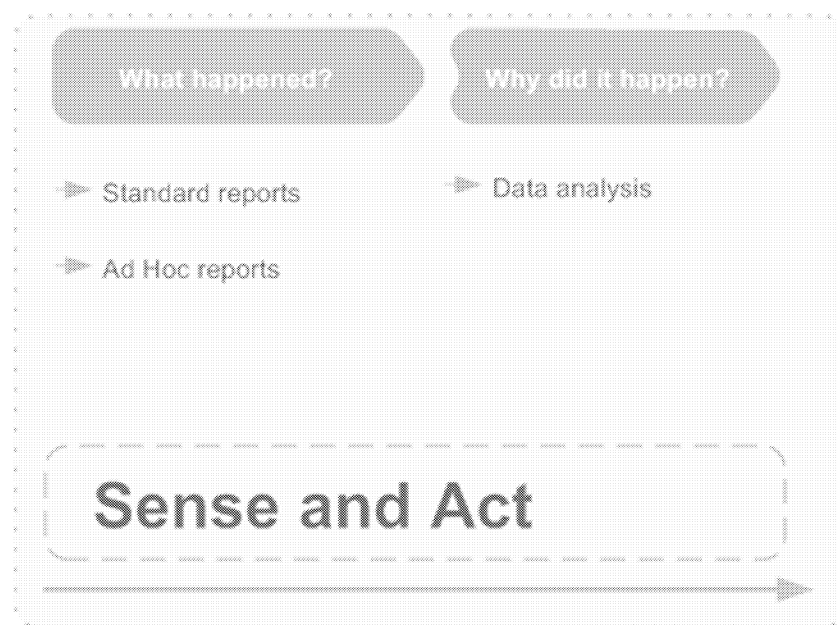
- Subjective
- Time consuming to perform quality assurance
- Less consistent across the entire organization



Reporting on what is happening is the first step to making business decisions. It is the core of business intelligence (BI)

Why it is important?

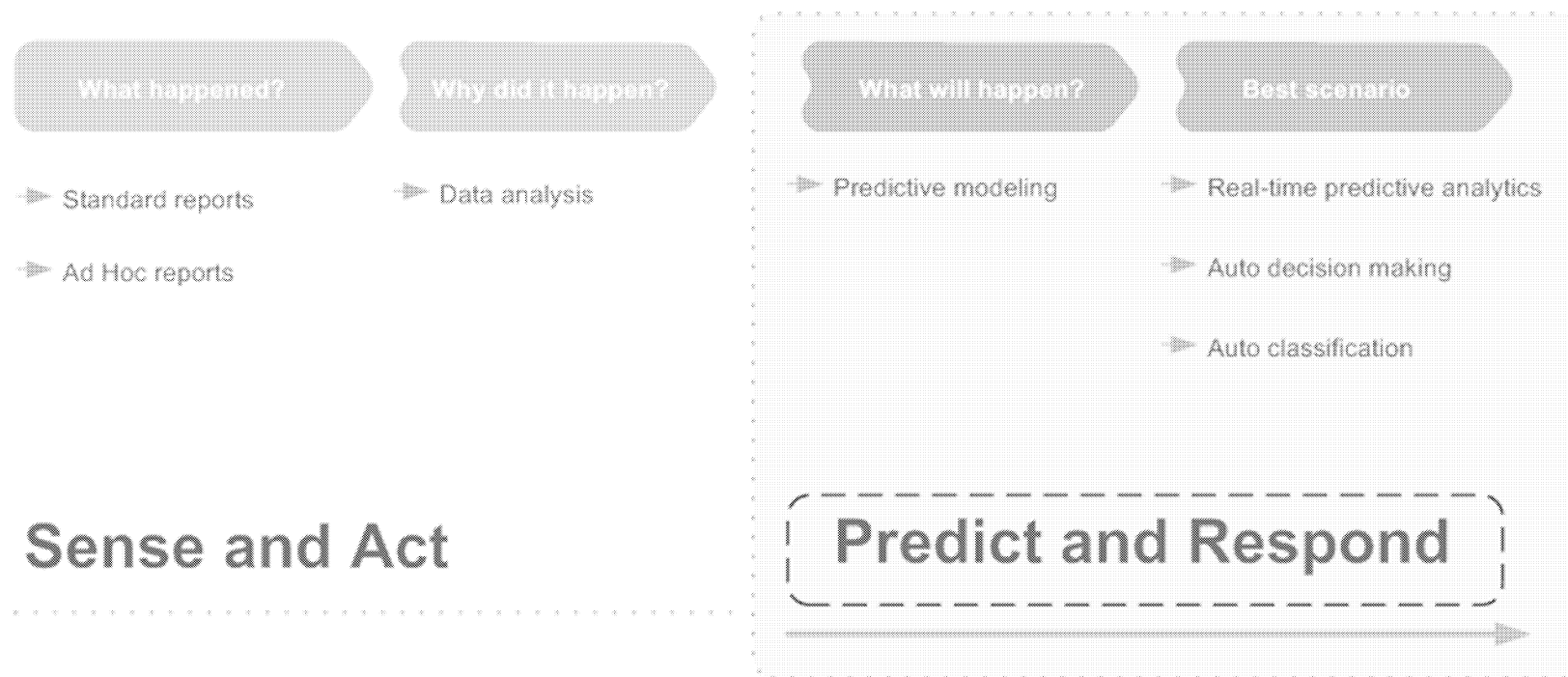
Where we are now – many decisions that affect operations are left to the 'gut', leaving enormous opportunities in the age of *Predictive Analytics*



Why it is important?

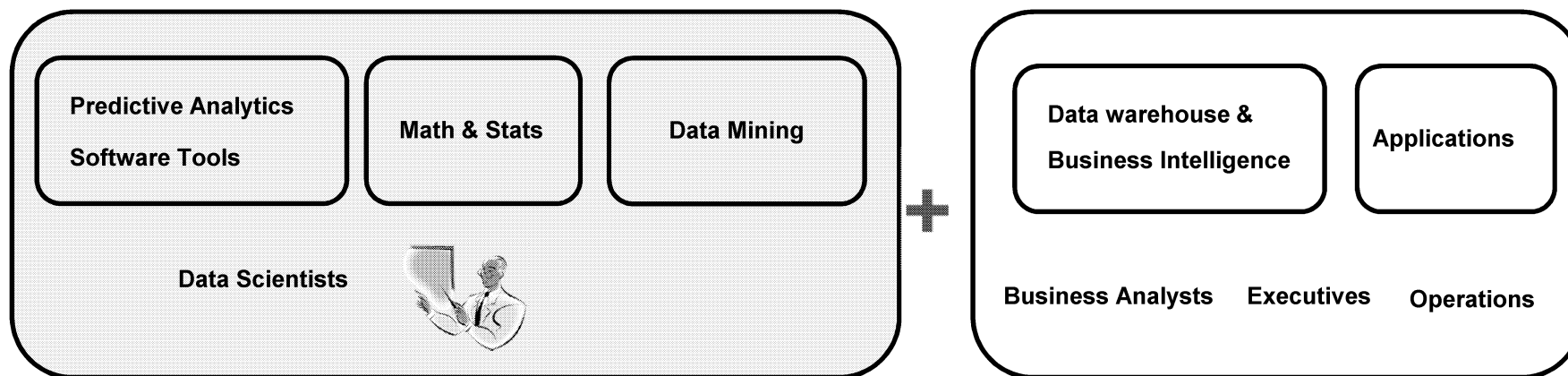
In the future – decision making process should be:

- Quantitative
- Evidence-based
- Transparent
- Easily verifiable
- More easily adjusted to meet new challenges and requirements



Predictive Analytics' structure

- The scope of analytics is expanding considerably as human behavior is modeled and expressed mathematically
- Predictive Analytics adds a new level of analytics maturity and takes decision making a step further.



Anticipate what is about to take place (predictive analytics)

Understand what is taking place (BI)

Predictive Analytics' Advantages

- ✓ “...the science of gathering the dots [the data] married with the art of connecting the dots”
- ✓ Using machine learning algorithms and statistical techniques for pattern recognition

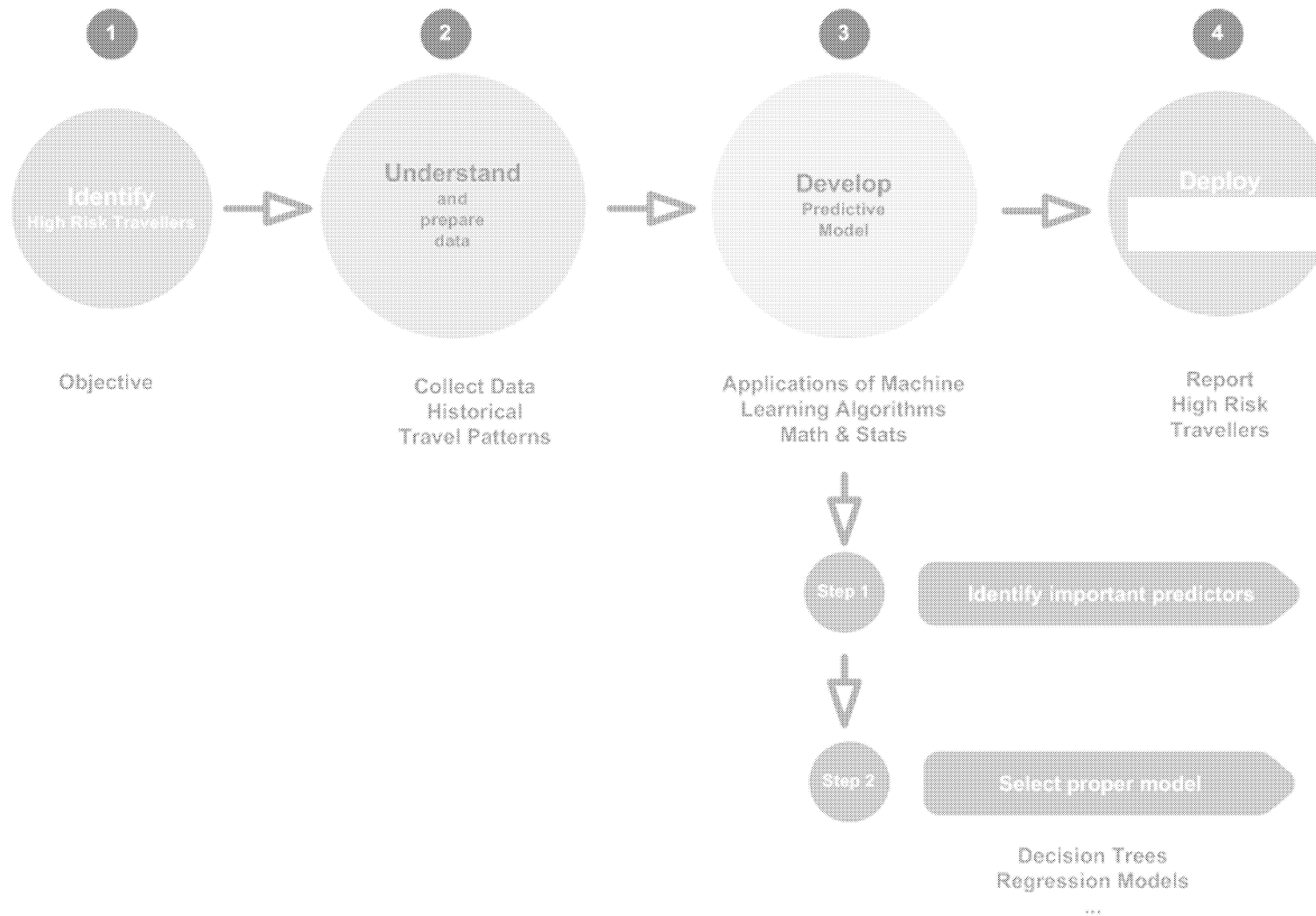


Pattern Recognition Algorithms

- ➔ Artificial Neural Networks
- ➔ Decision Trees
- ➔ Regression (Multivariate Analysis)
- ➔ Clustering and Association Models
- ➔ Classifications Models

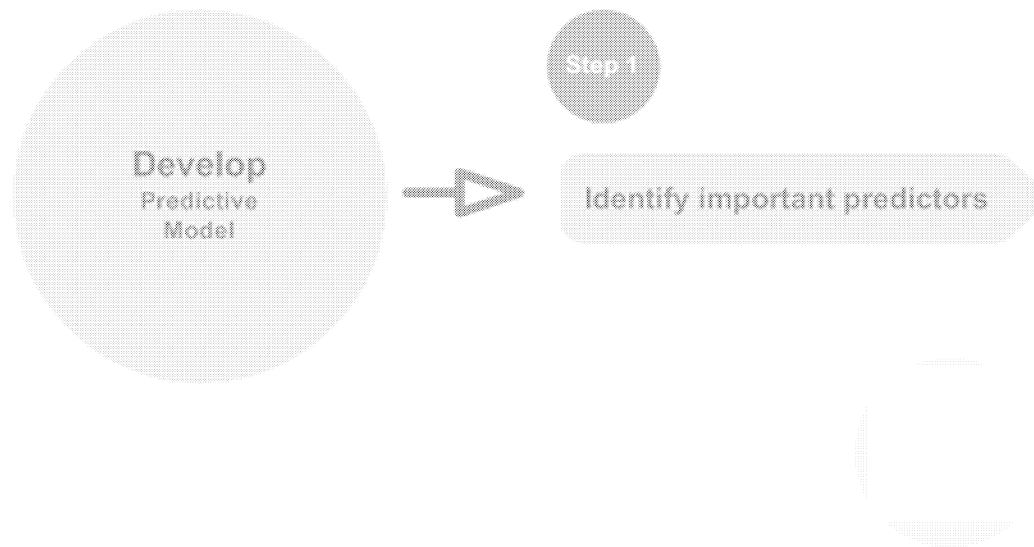
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Classification of Travelers by Risk Type



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Develop Predictive Models



Machine learning models selected

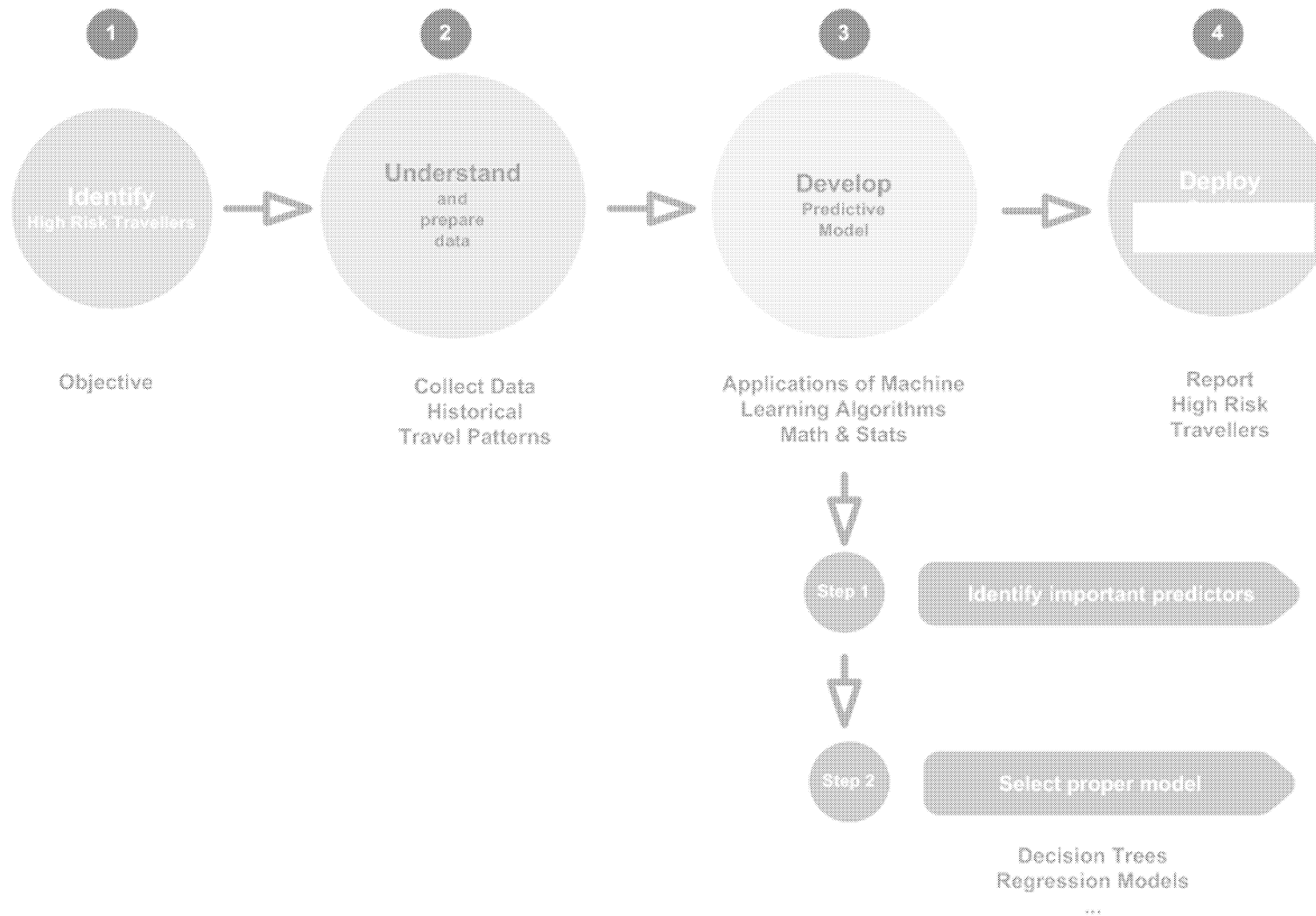
Decision Trees and Logistic Regression predictive models

Decision tree – Decision tree learning is one of the predictive modeling methodologies used in data mining. A tree can be developed by splitting the source set into subsets based on an attribute value test.

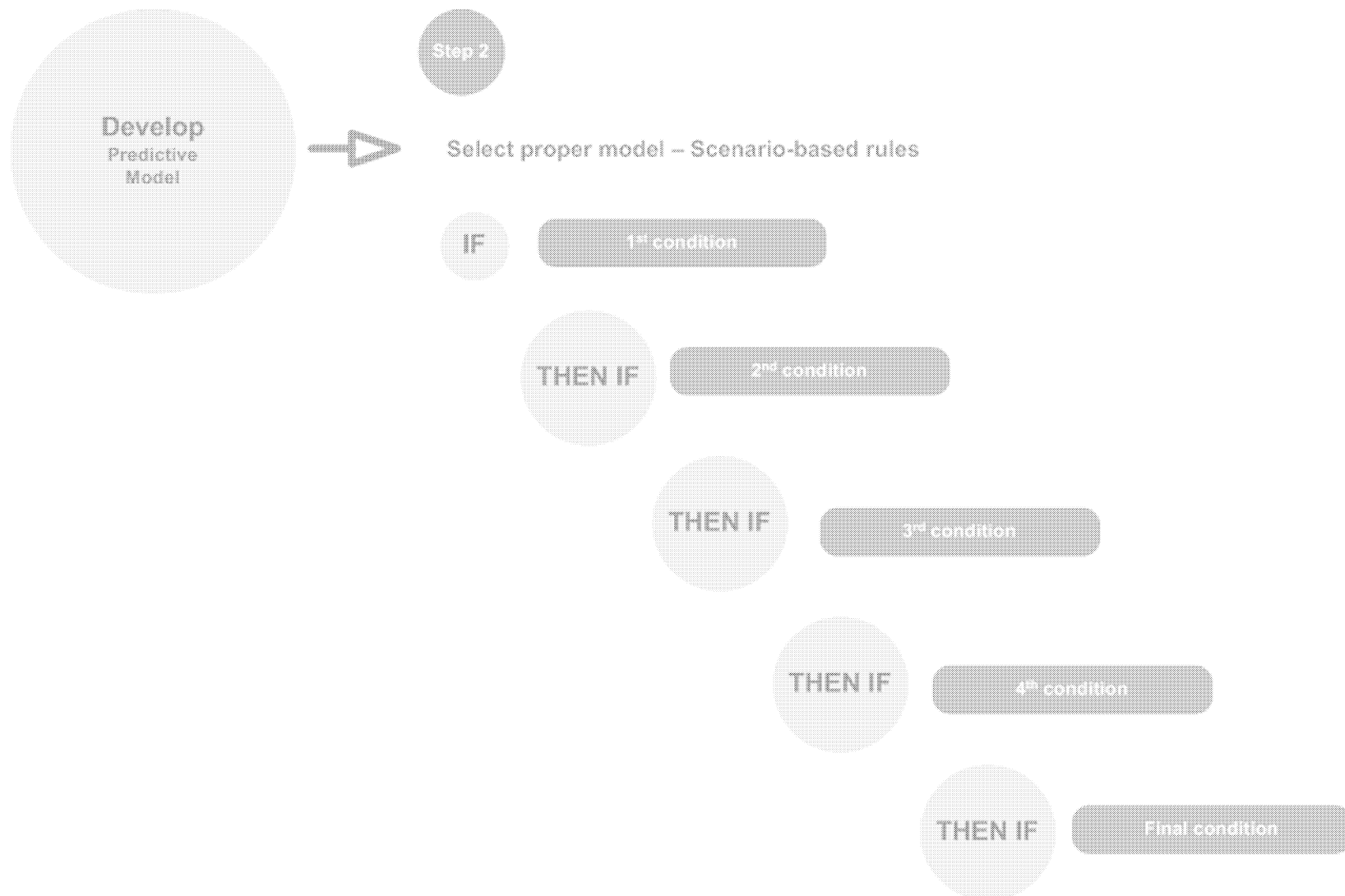
Logistic Regression – Logistic regression, also known as nominal regression, is a statistical technique for classifying records based on values of input fields. It is analogous to linear regression but takes a categorical target field instead of a numeric one.

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Classification of Travelers by Risk Type

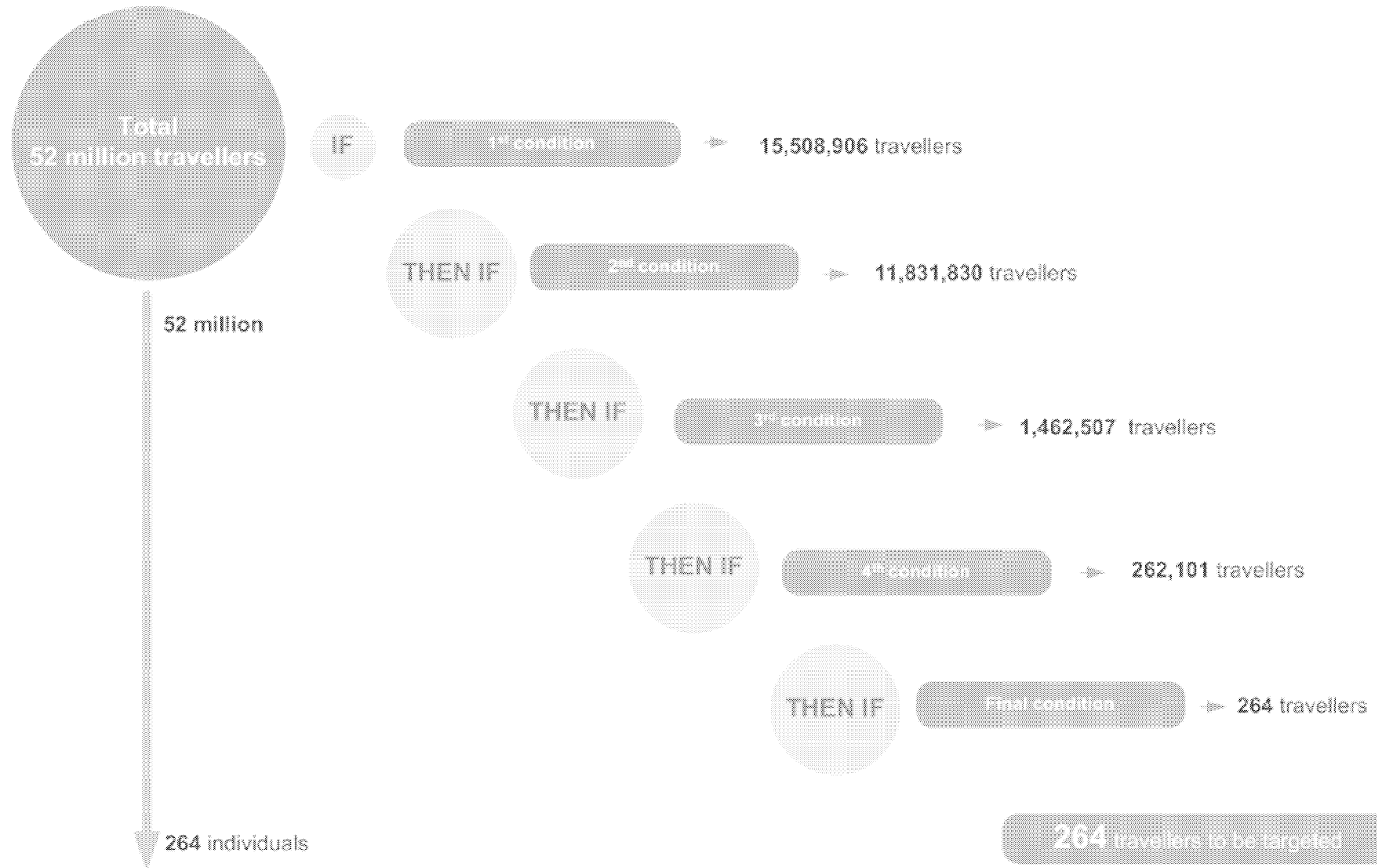


Develop Predictive Models – decision tree example



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Develop Predictive Models – sample statistics



Summary – Classification of Travelers by Risk Type

- ✓ 2 different prediction methodologies – logistic regression and decision trees (CHAID)
- ✓ Both models provide relatively similar results and also simple to implement

Next step – to find new ways of improving the prediction accuracies, either by introducing new parameters or exploring other possible predictive modeling approaches.

Existing challenges

4 – Software limitations – only available modelling software to us is SPSS Modeller. We require second software tool to validate and perform quality assurance of SPSS Modeller output. We also need additional machine learning modeling solutions for improving risk assessment which currently do not exist in SPSS. SPSS Modeller is limited and its capacity could be improved by combining with other software.



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National Targeting Centre Data Analytics

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Data Analytics at the National Targeting Centre

The CBSA National Targeting Centre (NTC) is using data analytics to support its mandate to support pre-arrival risk assessment through:



- Generating intelligence & investigative leads;
- Strengthening & testing Scenarios and Risk Indicators;
- Acquiring tools & developing methodologies to push analytics to front line users (targeting & intelligence officers).

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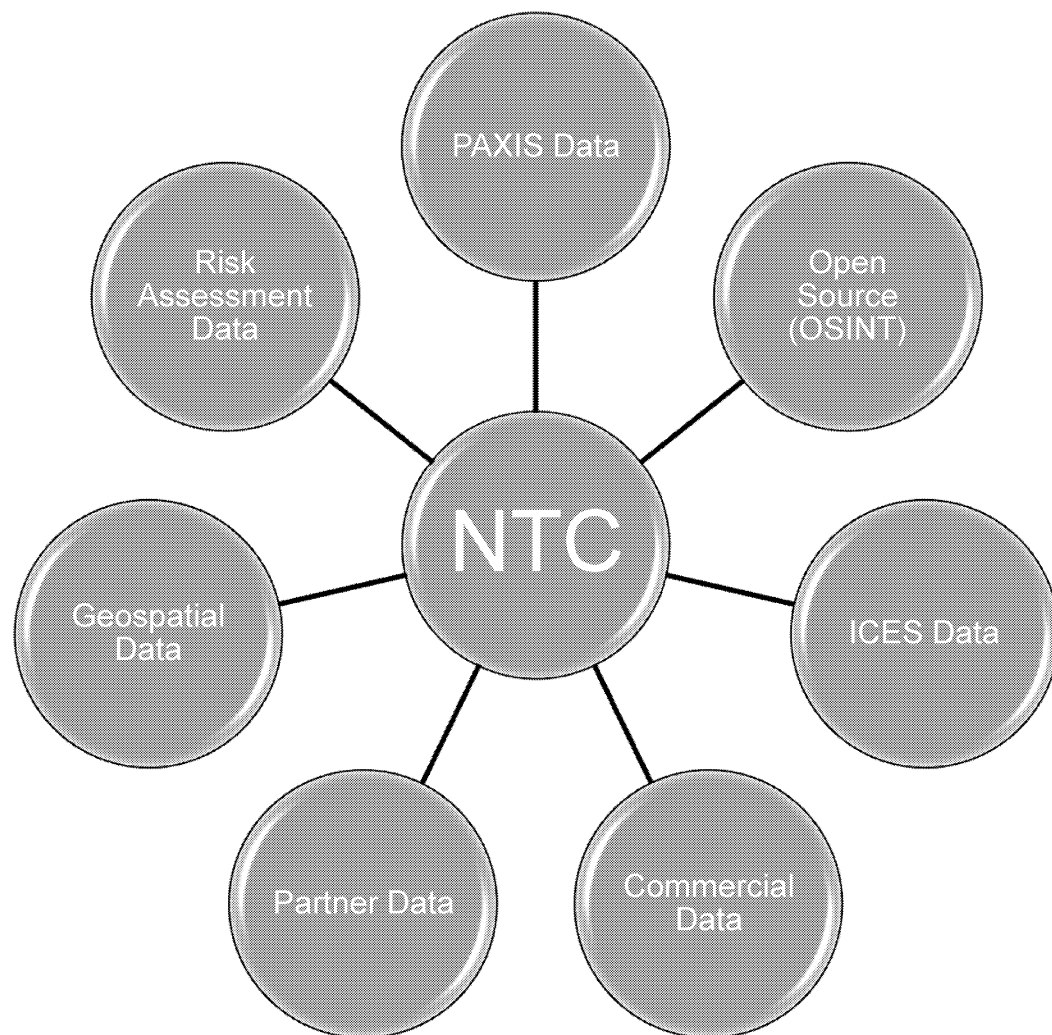
Combining Technical & Business Knowledge

- The NTC's Data Analytics unit has a combination of IT specialists, CBSA employees with mathematics, science & engineering backgrounds, as well as CBSA employees with essential business experience (targeting & intelligence) all working together to further the NTC's capabilities.
- The colocation of these individuals allows for continuous brainstorming, theory testing, and a rapid development environment where projects are run with targeting operations to determine the validity of ideas, methodologies and tools.

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Leveraging Data Sources



What is the data telling us?

- Business Problems
- Investigations
- Intelligence Files
- Trend Analysis
- Project Planning & Support

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Applying Analytics to CBSA Information



- Intelligence Reporting
- Open Source Intelligence
- CBSA Data Partner Data
- External Data
- Third Party Data

- SPSS Modeller
- I2
- SAS
- Social Media
- GeoSpatial

- Lead Generation
- Reporting
- Project Support
- Analytical Report
- Risk Indicators
- Scenario Development

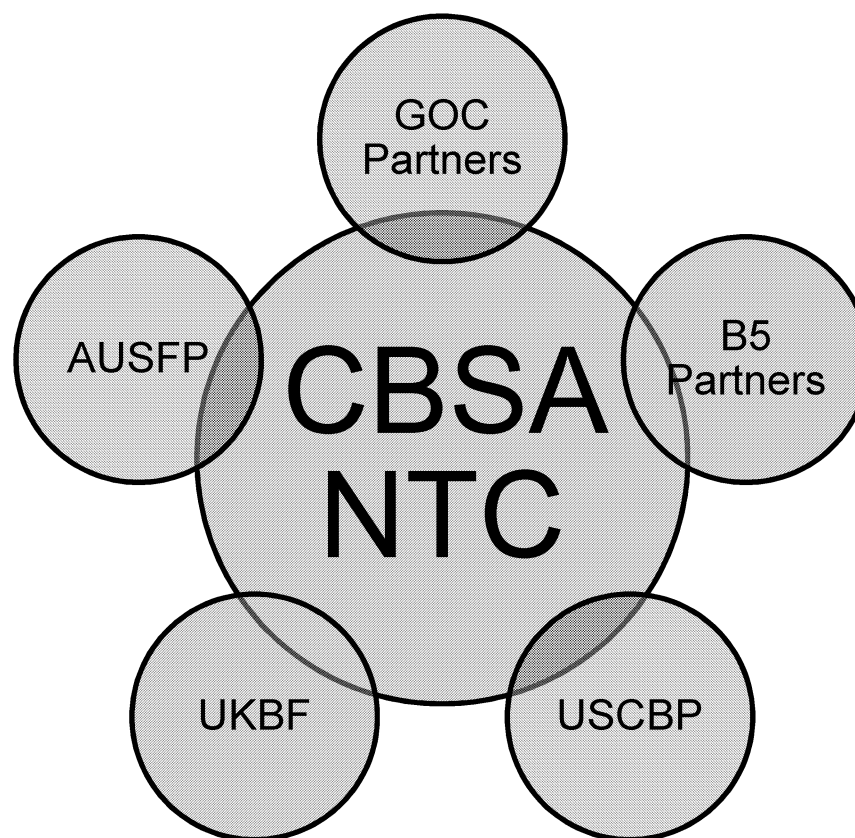
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Joint Projects & Initiatives

Joint Projects are underway & planned to:

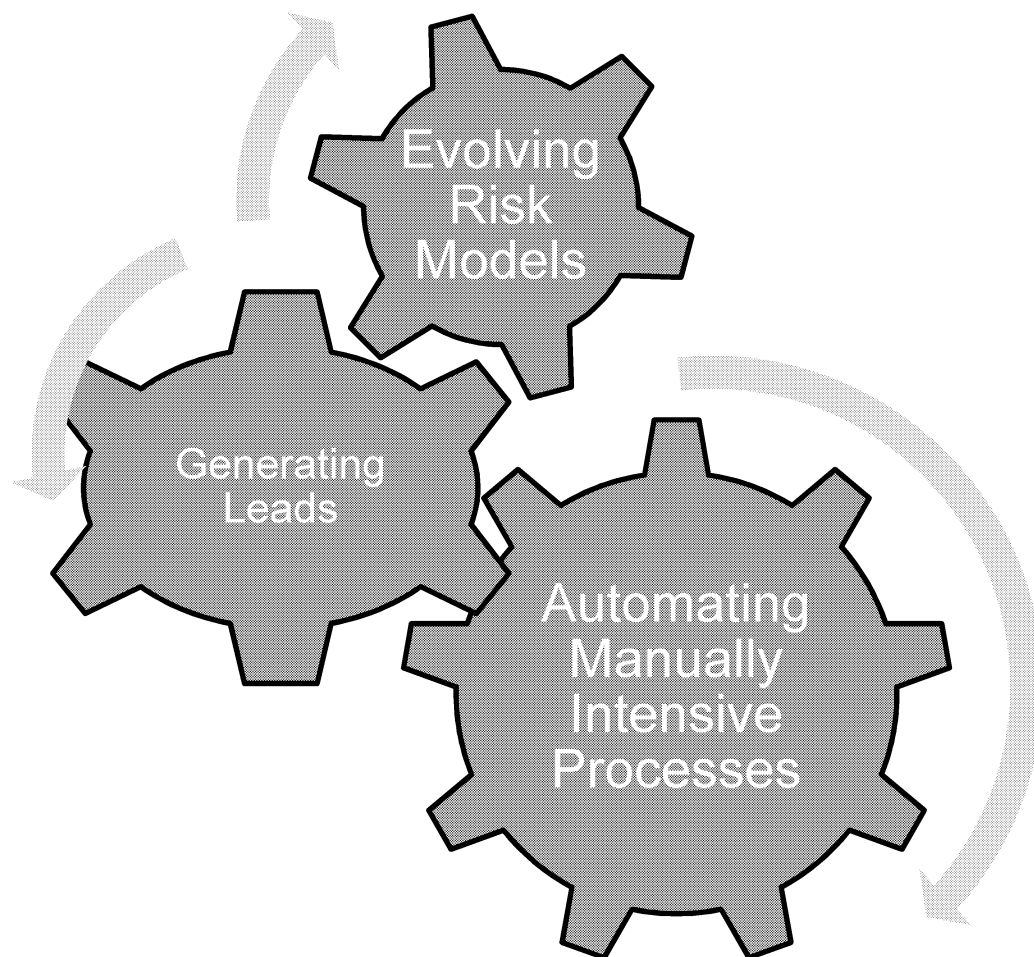
- Benchmark tools, data and methodologies
- Share information
- Mitigate joint issues
- Advance investigations
- Generate leads



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Data Analytics – Adding Value to the NTC & CBSA



Leveraging data analytics increases the effectiveness and efficiency of CBSA operations.

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Predictive Model Methodology

Targeting Data Analytics
June, 2016

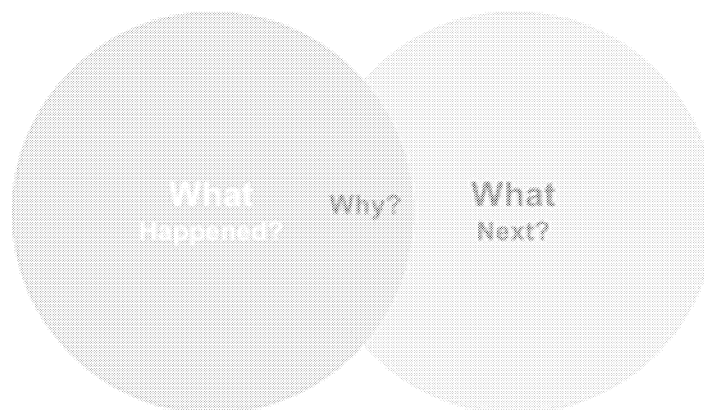
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What is Predictive Analytics?

It is the process of discovering patterns in past behavior to predict the outcome of future cases



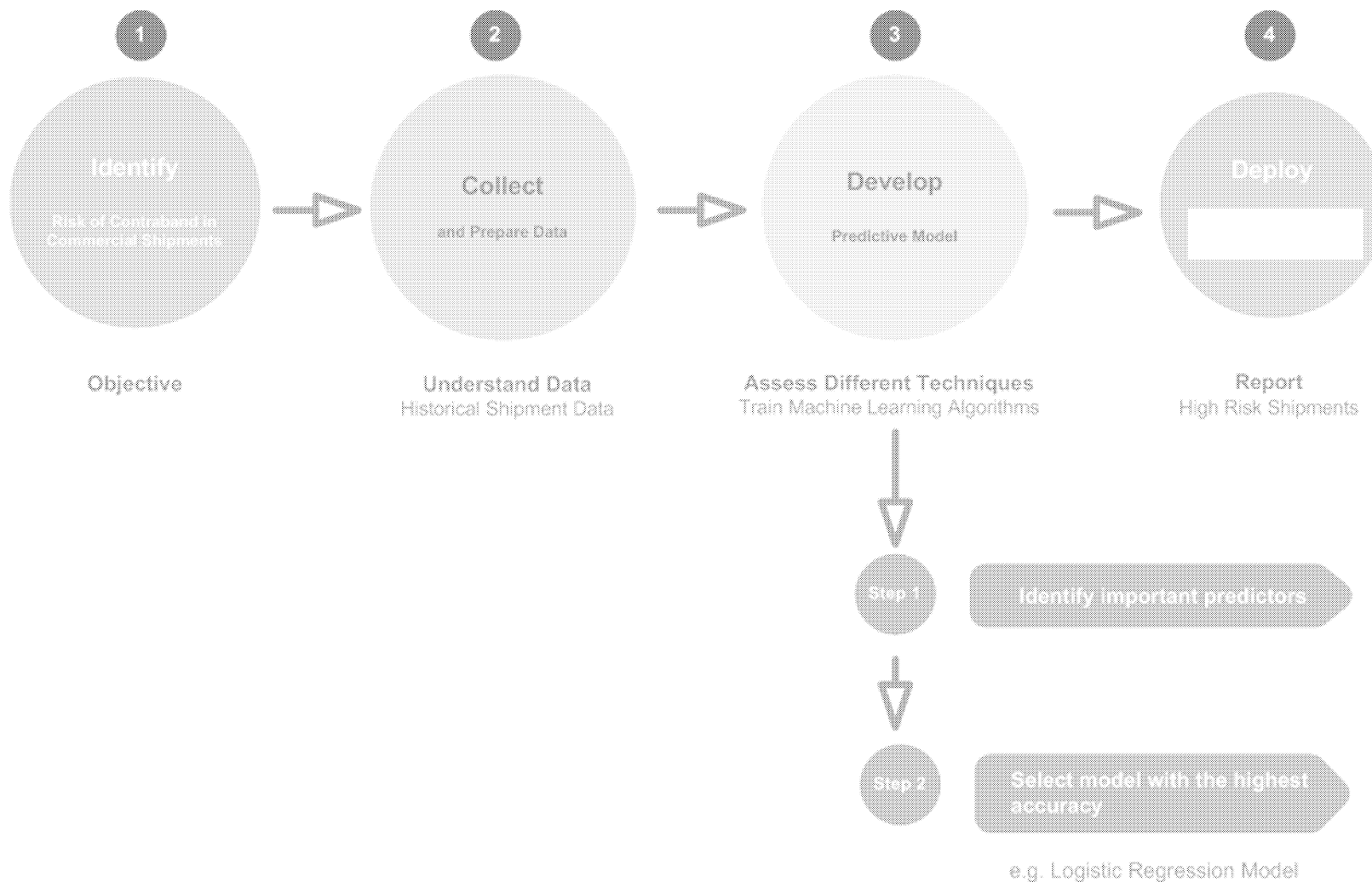
Drawing on a combination of

- Computer science
- Statistics
- Operations research

Benefits

- Drive smarter decisions by extracting actionable insights from the vast quantities of data
- Automate manual processes

Building a predictive model – our methodology



Objective

- Develop a model for predicting risk of contraband in commercial shipments
- Share the methodology with B5 Partners



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Border Five Heads Meeting

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Data Analytics within the CBSA

Highlights:

- CBSA has made significant investments in Business Intelligence and Advanced Analytics
- Significant progress has been made in strengthening Data Governance and improving both data quality and data integrity
- CBSA has extended capabilities in front-line operations, program management, as well as science and engineering research.

Lessons Learned:

- The need to take an enterprise approach to Data Analytics, which looks at managing data as an asset
- Developing a new strategy that integrates Business Intelligence, Data Governance and Advanced Analytics



Data Analytics within the CBSA

Science and Engineering Lab

- The Lab work on developing new methodologies and advanced analytics strategies in support of various projects across the CBSA.

Program Management

- Support the alignment and oversight of varying data analytics initiatives within the CBSA
- Integrating Reporting project is being integrated by Programs to build the Integrated Data Warehouse (IDW) which will provide insight into the 'single version of the truth' on the Agency's per

National Targeting Centre (NTC)

- The NTC conduct operational analytics to support the identification of both high risk traveller and goods destined for Canada.



Plan for Growth

- 3 year integrated plan to invest in analytics holistically
- Strengthening data and information governance by rationalizing investments on new technologies, while continuing to leverage existing investments
- Build organizational capabilities:
 - Focus on an building an analytics focused workforce
 - Change the culture by moving to a fact-based decision making process
 - Enhance Integrated Data Warehouse
- Leverage existing partnerships to develop joint capabilities



Challenges and Risks

- Data acquisition: streamlining processes and expediting availability of data for analytics
- Managing privacy and security considerations
- Recruiting and retaining data scientists: small number in the Lab (R&D), NTC (targeting), programs (BI)
- Funding: coordinated approach to investment planning



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DATA ANALYTICS AND PREDICTIVE PROFILING

ISSUE

The B5 is invited to engage in a three-part discussion:

- 1) **Sharing Experiences:** Provide a presentation on their experiences, current analytics capacities, and challenges.
- 2) **Looking out to the Future:** Engage in a discussion with a private sector company, IBM, on global trends, private sector challenges, and the future of analytics.
- 3) **What does this mean for us? :** Identify opportunities and next steps for the B5 to share capabilities and work collaboratively.

EXECUTIVE SUMMARY

The discussions on data analytics among B5 partners are still in the early stages, but all recognize this as an area for greater collaboration. In April 2015, the Heads of Intelligence group formed a Data Analytics Tradecraft Working Group with a specific intelligence-related purpose to increase sharing, collaboration and learning in the domain of data analytics and to leverage the knowledge and optimal practices to advance threat identification. In June 2015, in support of that group, Canada hosted the first Analytics Practitioners Workshop at our National Targeting Centre. Also in June 2015 at the B5 Heads meeting, the B5 further explore the topic of "big data". They were also interested in holding meetings with the private sector to understand some of their approaches to collecting and analyzing large amounts of data.

In a teleconference between the B5 Deputy Heads, December 2, 2015,

While the Deputy Heads were keen to work collaboratively together and to share the burden of this large endeavor, the focus must be on those areas where we have similar objectives, challenges, and share a common interest.

AGENCY POSITION

Canada intends to share its experiences in Data Analytics with its B5 partners, in order to gain insights into how each agency has used data analytics to its advantage, including what lessons can be learned from the HINT Data Analytics Tradecraft working group. We would also like to express our willingness to take the chair of this group. In keeping with CBSA's Data Analytics strategy, however, we would like to broaden the B5 "community of practice" to include the use of analytics to support a wide range of program and operational objectives.

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TALKING POINTS

1) Sharing Experiences (President introduces Louis-Paul Normand who will deliver CBSA's presentation)

- Last fall, we introduced a new three-year Data Analytics strategy that will transform the Agency's capacity for data governance, business intelligence, and advanced analytics.
- The Agency has made considerable progress in this field over the past few years, but much work has taken place in a "siloed" environment. As a result, we are now taking an enterprise approach to the way that we gather, organize and use our data.
- As part of this transformation, we look forward to working with – and learning from – our B5 partners. By sharing our expertise, we can all take better advantage of the rapid changes which are taking place in this field.
- To this end, I would like to introduce Louis-Paul Normand, our Associate Vice-President, Information, Science and Technology. Louis-Paul has played a leading role in managing our major information technology projects. I would now ask him to share Canada's data analytics experience. (See TAB 3A)

2) Looking out to the Future: IBM Presentation and Discussion

- If we could get risk assessment right and take advantage of other technologies (e.g. different sensors and communication paths) that can provide us with information in advance of a person or shipment reaching a Port of Entry, we would be able to determine admissibility in advance of the person or shipment reaching our borders.
- We would truly be pushing our 'borders out' and would never have to stop admissible travellers or shipments, unless it was for a random check. We would not need Primary Inspection Line booths as we see them today and Ports of Entry would work more like what we know as "secondary" today (only improved I think).
- We would communicate with citizens and shippers by a variety of channels (e.g. their smart devices, the dash on their car, their wearable device, etc.) to signal them to stop or just welcome them into the country. So imagine a "zero wait time" for admissible traffic! Who wouldn't want that? Arguably the Customs experience from a citizen's perspective hasn't changed much in 100 years. This would be transformational. But it is only possible if we get risk assessment right. That's how important and core 'analytics' is to border management.
- Of course there is more than risk assessment (as the presentation shows) and we can take advantage of available products. Machine learning has advanced enough to be decent in language translation, for example – something that could be useful in a Port of Entry. Perhaps countries could split up the evaluation of products (not limited to language translation) and share results?

- Imagine also Artificial Intelligence-assisted officers who have the regulations, standard operating procedures, or instructions they need instantly. We all know we can't hold everything in our head.
- Our Science and Engineering Directorate has recently started some work in Robotics. Imagine the assistance a smart (analytics or AI based) robot could provide. We have recently started into the world of remotely operating small ports!
- One very practical point. As boring as it sounds we need to use the same lexicon when we talk about analysis and analytics and Artificial Intelligence. We've experienced lots of misunderstanding based on people using terms in less standard ways. Perhaps that could be an action item for our experts going forward.

3) What does this mean for us? Open Discussion by all members

- We think the HINT Data Analytics Tradecraft Working Group has been doing good work since its creation. Its focus on operational intelligence and targeting issues is important, and we would highlight the need to confirm the chair of this working group for the coming year. The B5 also needs to require the group to set objectives and implement opportunities to advance tradecraft application and learning. Canada is willing to take this leadership role.
- In addition, as noted in the "next steps" slide of our presentation, we would support the formation of a broader "community of practice" or "expert network" on data analytics which would supplement the targeting and intelligence focus of the HINT tradecraft working group.
- We could begin by sharing contact information in our respective organizations for the lead players involved in data governance, business intelligence, and data analytics. We could then task these leads to prepare a more in-depth analysis of potential areas for co-operation.
- Working together, we will all be in a better position to address the challenges and opportunities posed by the rapidly changing world of data analytics.



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Data Analytics: Sharing CBSA's Experience

B5 "Deep Dive" Session
February 25, 2016



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Highlights

- CBSA has deployed several foundational elements of its business intelligence and analytics strategy
 - Several new solutions have been developed with data analytics as a core component (emanifest, Entry-Exit, IAPI)
 - We have formalized common data services governance and delivery across the agency
 - We have launched several pilot and research projects to inform future investment decisions
- To build on this momentum, the CBSA has been developing an integrated, enterprise approach based on increasing our analytics maturity over the next three years.
- Our strategy is based on close collaboration between Operations, Programs, and Information Science and Technology supported by strong data governance to manage data as an enterprise asset while respecting security and privacy.
- This integrated approach will enable the Agency to leverage opportunities around “Big Data” in support of our strategic objectives – facilitating trade, ensuring security of the border and promoting management excellence.
- The agency is using a Center of Excellence approach with its Science and Engineering services dedicated as a body of knowledge to advance exploration and capabilities.



Recent Successes: Operational Analytics

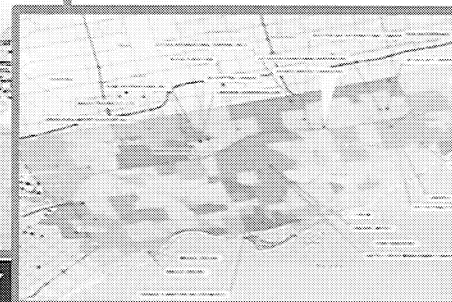
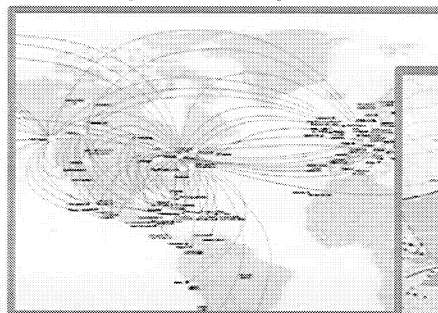
By using a wide range of analytics, the CBSA has provided improved tactical referrals to targeting, intelligence, and investigation personnel





Operational and Intelligence Analytics

- The CBSA is actively using data analytics to fulfill its mandate to support pre-arrival risk assessment leveraging commercial and traveller data bases, social media, geospatial information, and operational models.
- Examples include:
 - Operations research to improve scheduling of Border Service Officers and resource allocation.
 - Mathematical Algorithm development and logic model practice in progress and highly needed.





Advanced Analytics: the next frontier

Advanced analytics offer many opportunities for the Agency to increase the effectiveness of its Programs:

- Advanced statistical models to improve compliance testing , detect trade fraud, and support program optimization.



A New Cross Agency Integrated Strategy

- A three-pronged approach to deliver impactful business value faster
- Information Management as a “mission value” for CBSA

Data Governance

- **Governance Structure.** Provide an Agency-wide approach to decision-making on data issues.
- **Stewardship.** Designate data stewards and centres of expertise, with clear roles and responsibilities.
- **Standards and policies.** Implement common definitions, data quality processes, and an enterprise data model.

Business Intelligence

- **Data Integration.** Build an integrated data warehouse, drawing on key data from multiple sources.
- **Self-service.** Enable quick access to key reports and data.
- **Competency Centre.** Create a Business Analytics Centre for cross-functional support and coordination.

Advanced Analytics

- **Data acquisition.** Provide analysts with access to key data from internal and external sources.
- **Emerging tools and techniques.** Explore potential for predictive analytics, visualization, and other advanced tools.
- **Workforce development.** Recruit and develop high-skilled analysts.



Challenges and Risks

- **Data acquisition: need for agility**
 - streamlining processes, expediting availability of data for analytics
 - managing privacy and security considerations, authority to release data
 - governing legacy data and open data is not converging rapidly
- **Recruiting and retaining data analysts: scarce skills**
 - small number of qualified analysts across the organization
 - academic and experience background matters in this domain
 - need to bring together data scientists and business analysts to break down silos and improve results
- **Funding: requires strategic planning**
 - coordinated approach to investment planning and IT development
 - sustained commitment
 - business case to fund a Centre of Excellence is difficult to sell



Next Steps: Potential for Joint Capabilities

- **Share expertise**
 - Exchange best practices, successful analytics models
 - Collaborate on development of new tools and techniques
 - Survey business capability catalogue and seek MOU for data interchange
- **Build community of practice across B5 partners**
 - Identify key contacts in each border management agency
 - Continue work of HINT Data Analytics Tradecraft working group, which is focussed on operational risk assessment, intelligence, and investigations
 - Establish consultative network to include wider range of issues, such as program optimization
 - Optimize and unleash the role of Science and Engineering as a think tank in the community



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Environment Scan: *Information Management and Data Analytics at the CBSA*

**Presented to : Information Management
Committee (IMC)**

**Information, Science and Technology Branch,
(ISTB) and Programs Branch (PB)**

April 5, 2016

Apollo #:2741024

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Purpose

- To provide an overview of Data Analytics and Information Management initiatives at the CBSA.
 - Provide a baseline and “diagnostic” for the Information Management Committee.
 - Support development of a multi-year Action Plan and Business Case in spring 2016.



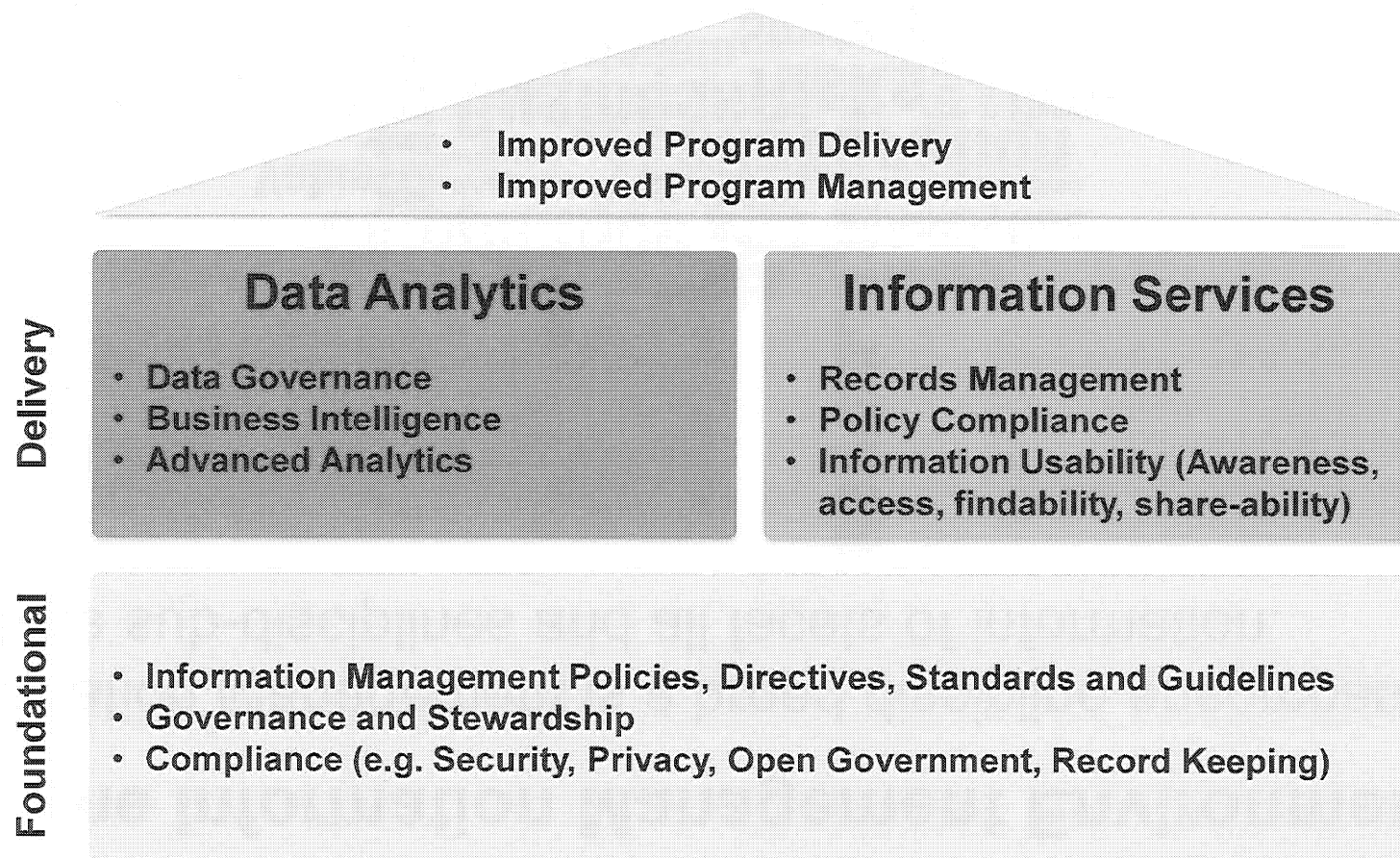
The Information Management Environment

Information Management is a broad discipline encompassing multiple sub-disciplines and all facets of information.



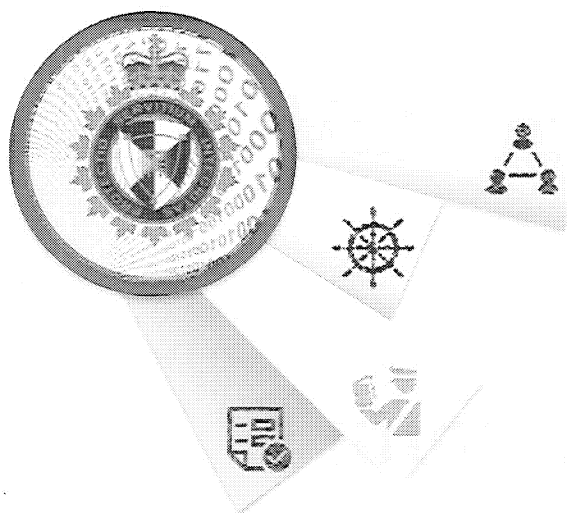


The CBSA Information Management Environment





Information Management - Core Principles



*"The right information is
available to the right people
at the right time."*

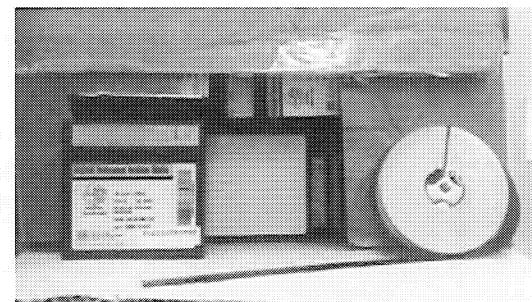
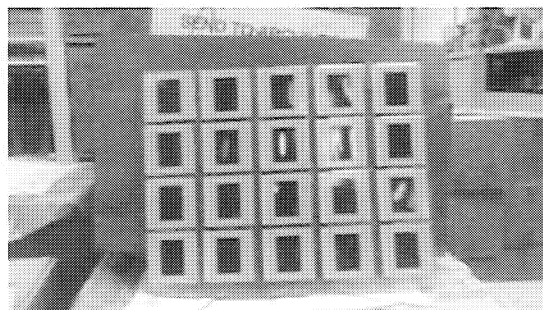
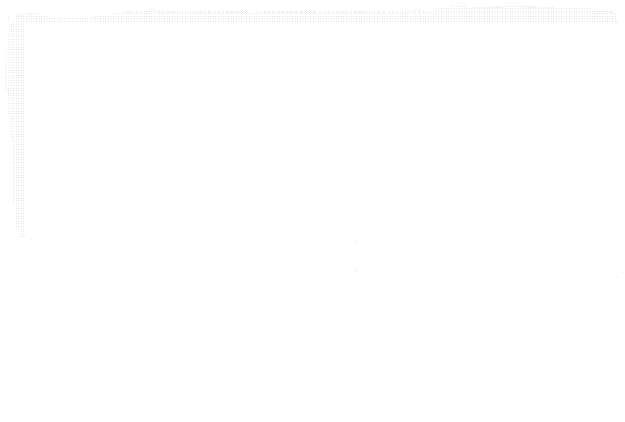
- ✓ Collaboration for a *Knowledge-Based Agency*
- ✓ Increased *value* and *usability* of *information* through strong *ownership*
- ✓ IM as a *Mission-Value* for Border Management
- ✓ Managing *risks* and reducing *liabilities*



Information Management Services



Still With CBSA....



...and difficult to dispose of



Key Enterprise Information Management Stakeholders

The Agency

- Provides expertise on Information and Records management in electronic and paper format;
- Retention and Disposition Authorities
- Information Management Policy and Directive
- Information Tools and Processes

Information Security

- Security of paper and electronic information and records;
- Best practices, tools and processes for the protection of information of business value;
- Protection of classified information;
- Disposition of designated information;
- Guidance and advice for the protection of regional records and information.

Learning Communities

- Electronic environments for sharing of information and collaboration;
- Environments for sharing articles of interest.

Access to Information and Privacy

- Provides information organizational structure in paper and electronic environments facilitating the collection of information;
- Guidance and best practice for ATIP information holdings.

Regions

- Supporting regional Communities of Information and Records resources;
- Providing common processes, tool kits, advice and guidance.

All Employees

- Organizing information for effective and efficient horizontal knowledge sharing, collaboration, retention and availability of corporate history, enterprise search, etc.
- Produce and consume our information.

Government of Canada

- TBS CIOB – Policies, Directives, MAF, Government of Canada IM Strategy
- GC IM Council
- Office of Comptroller General / Information Management Audits
- Public Service and Procurement Canada / GCDOCS Enterprise Program Management Office

External stakeholders



Context

Why care about managing information?

- Information can *enable* us and *overwhelm* us. There is such a thing as “Too much information”.
- *Everything we do* within the Agency *starts* with information and generates more *information*.
- Information is a business *resource* (like people and money). Not managing it isn’t a viable option.
- The Agency renders decisions every minute using “information”.

State of Affairs

- Relatively modest IM program (less than 5 years really)
- Recent investments made towards compliance, need to shift focus to enabling programs
- Basic IM services in place, transformation required to *provide foundational business support* (e.g. Human Resources, Finance, etc.)
- Inconsistent IM practices across regions
- Agency doesn't have an approved or funded multi-year strategy to sustain IM
- This strategy needs to support **key drivers** and address **important deficiencies**
- No real analytics program in place cohesively



Drivers and Challenges

Drivers

- Increase usability and value of our information in support of border operations
- Implement Open Government Services to Canadians
- Compliance to the Government of Canada Information Management Policy suite
- Continuously monitor, improve and innovate the Agency's "Information Ecosystem"
- The level of risk associated to Cyber threat is constantly raising

Challenges

- *Outdated Practices*
- *Information Governance challenges*
- *Lack of Context*
- *Lack of Collaboration*



Problem Analysis

Causes

Outdated Practices.

Information Governance
Challenges.

Lack of Context.

Lack of Collaboration.

Consequences

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IM Strategy - Proposed Roadmap

IM Strategy (2016-2018)

2016/2017

- Creation of Business Portfolio Information Agents to work directly with business clients
- Development of new IM Service Model to provide foundational business support
- Initiate clean up, read-only access and deletion of net work and personal drives.
- Continue Apollo roll-out and Business Optimization
- Regional engagement and standardization of practices
- Develop a culture change management plan

2017/2018

- Continue work towards compliance to the GC IM Policy Suite
- Enterprise Information Mapping and metadata strategy
- Configuration of Apollo to enable collaboration and knowledge sharing

2018/-

- Develop Social Business Platform capabilities
- Business Information Enablers project (i.e. Digitization, electronic Workflows)



CBSA Audit Action Plan - Proposed Roadmap

CBSA Audit

2016/2017

- Creation of Business Portfolio Information Agents to work directly with business clients
- Development of new IM Service Model to provide foundational business support
- Initiate clean up, read-only access and deletion of network and personal drives.
- Continue Apollo roll-out and Business Optimization
- Regional engagement and standardization of practices
- Develop a culture change management plan



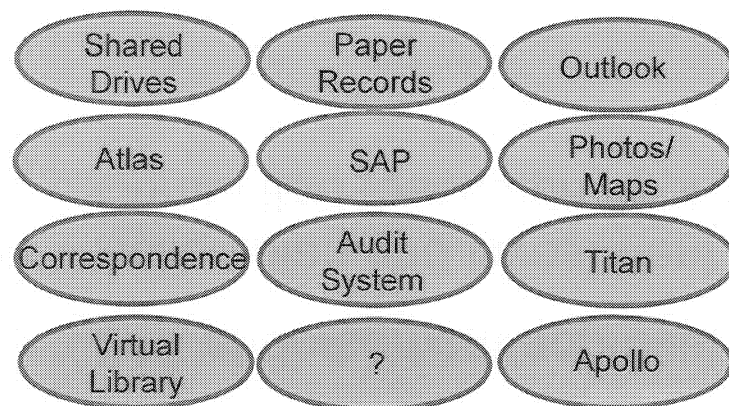
Next Steps

- Development of Strategy (*February – March 2016*)
- Consultations - including regions (*February – March 2016*)
- Draft Strategy (*March 31, 2016*)
- IMC endorsement/approval (*April 30, 2016*)
- Action plan and investment proposal presentation to Executive Committee (based on approved strategy) (*May 15, 2016*)

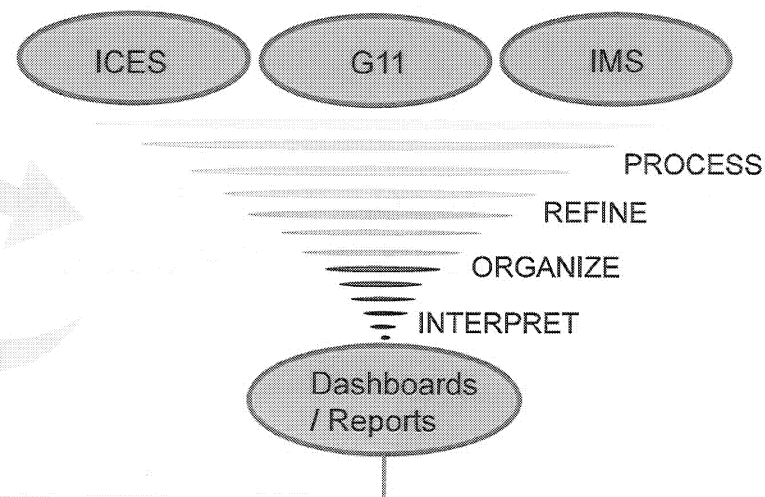


Appendix 1 - CBSA Information Ecosystem

STRUCTURED / UNSTRUCTURED INFORMATION



RAW DATA



INFORMATION MANAGEMENT Resources

- Information Analysts
- Records Managers
- Librarians
- Archivists
- Taxonomy Specialists
- Information Architects
- Technical Specialists

DATA ANALYTICS Resources

- Data Scientists
- Data Analysts
- Data Architects
- Taxonomy Specialists
- Technical Specialists



Data Analytics



Data Analytics – Key Stakeholders

ISTB

- Enterprise Architecture and Information Management – provides expertise on IM, architecture and analytics
- Science and Engineering (Lab) – data scientists provide expertise on analytical methods
- Service Lifecycle Management – service delivery, portfolio managers; solution development and support

Operations

- National Border Operations Centre – applied analytics in support of targeting, situational awareness, operational intelligence
- Regional Corporate Program Support Divisions – regional performance reporting and analysis
- Intelligence – Data Exploitation Unit

Comptrollership

- Strategic Transformation and Renewal – Cost Factor Manual; Agency Comptroller - Planning, Budgeting, and Forecasting Project

Programs

- Data Fusion Centre - data governance
- Performance Reporting Unit - data extraction and reporting service, Consolidated Management Reporting - training and support
- Program Integrity unit - risk assessment
- Performance and Analytics units

Corporate Affairs

- Corporate Planning and Reporting – corporate performance reporting (DPR), Performance Measurement Framework, benefits management
- Audits, evaluations, ATIP, media

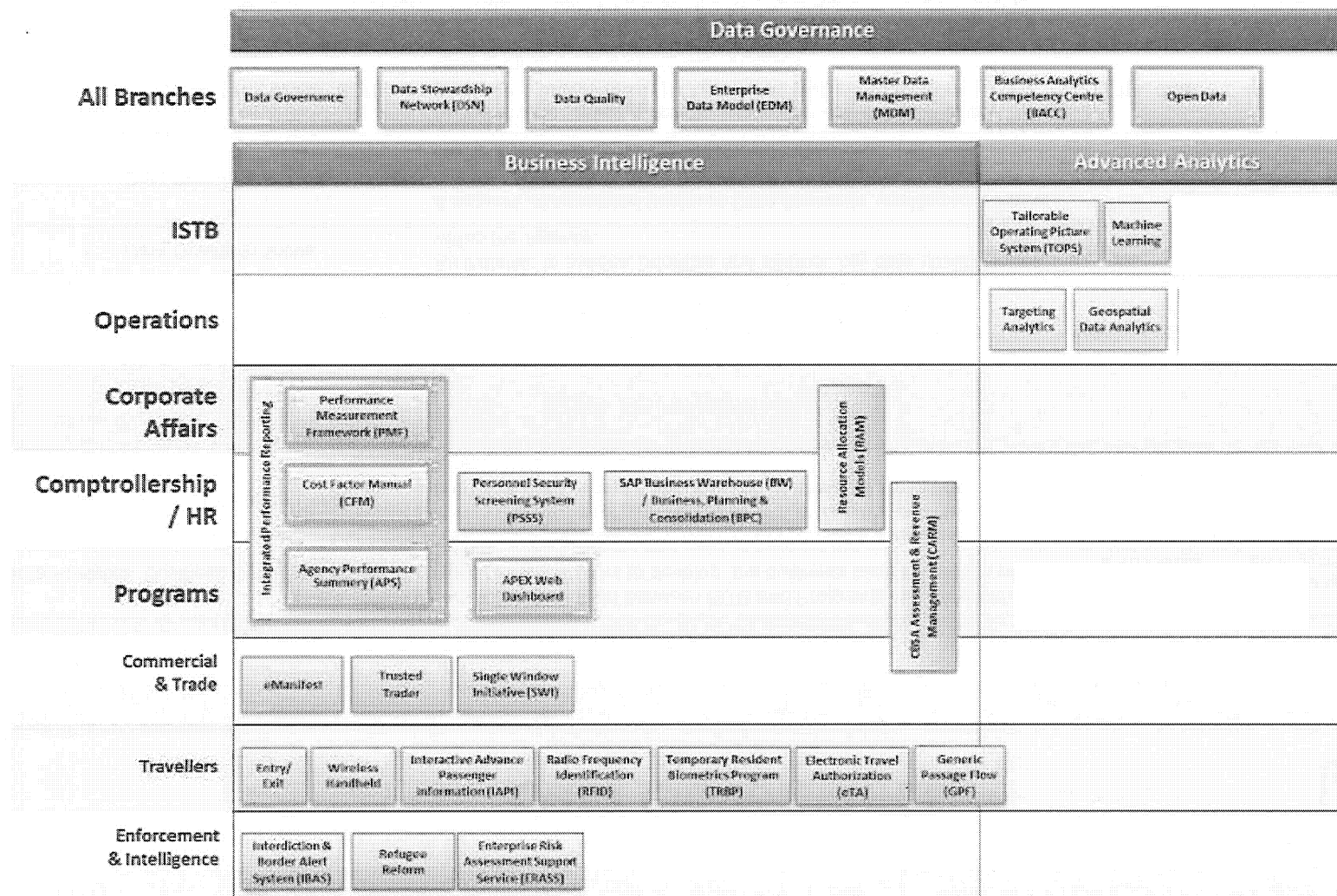
Human Resources

- HR Programs – workforce analysis (e.g. demographics, time utilization) and link to People Strategy



Data Analytics – Related Initiatives

Potential Business
Case Inputs
(funding pressures)





Data Governance

Potential Business
Case Inputs
(funding pressures)

Initiative	Description	OPI	Status
Management			
Data Analytics Business Case / Action Plan	A collaborative effort between ISTB and Programs , working with Agency stakeholders to develop the business case and action plan for data analytics.	Programs - GBMDA ISTB - EAIM	IMC in May 2016 EC in June 2016
Business Analytics Competency Centre (BACC)	A cross-functional organization that brings together business, IT and analytical skills to make effective use of Business Analytics investments.	ISTB - EAIM	In progress
Data Governance Program			
Data Governance	The establishment of accountability as well as clear roles and responsibilities for managing data as a corporate asset.	Programs - GBMDA ISTB - EAIM	Done
• Data Quality Initiative	An initiative to assess, prioritize and address key data quality issues within the Agency.	Programs - GBMDA	Gartner report: April 2016
• Data Stewardship Network (DSN)	A network of appointed Business Data Stewards working together to ensure CBSA data is fit for use as well as managing it throughout the data lifecycle from planning to disposition.	Programs - GBMDA	Launch: April 2016
• Enterprise Data Model (EDM)	An initiative to define a holistic, integrated view of all the data produced and consumed by Agency, as well as establishing consistent terms and definitions for data .	ISTB - EAIM	Phase 2: April 2016
• Master Data Management (MDM)	An initiative to consolidate and cleanse key Agency data to achieve a "single version of the truth" thereby enabling the cross-integration of CBSA operational systems.	ISTB - EAIM ISTB - TPP	Launch in Q1 2016-17
• Open Data	In support of the Directive on Open Government, the Agency must release all eligible data within the Agency. This includes compliance deliverables such as a comprehensive inventory of the Agency's data and continued release of open data datasets	ISTB-EAIM	In Progress



Business Intelligence

Potential Business
Case Inputs
(funding pressures)

Initiative	Description	OPI	Status
Integrated Performance Reporting (IPR) Initiative	Alignment of various reporting instruments (PMF, APS, MOB, CFM) to a universal of performance indicators that can support strategic, tactical and operational decision making.	Programs - GBMDA CAB - CPRD Comptrollership	Business case in progress (June 2016)
<ul style="list-style-type: none"> Performance Measurement Framework (PMF) 	A new corporate measurement framework based on the upcoming PAA changes (2017/18 implementation) that is the basis for the annual Departmental Performance Report.	CAB - CPRD	Draft completed
<ul style="list-style-type: none"> Agency Performance Summary (APS) 	A Quarterly management summary report that reports on Key Performance Indicators (KPI) as well as management tactical priorities.	Programs - GBMDA	Ongoing
<ul style="list-style-type: none"> APEX Web Dashboard 	Automation and delivery of key performance metrics and management reporting priorities from the APS (Traveller, Commercial & Trade, Enforcement & Immigration) in the form of an interactive web dashboard.	Programs - GBMDA ISTB - EAIM	In progress – IT intake approved
<ul style="list-style-type: none"> Cost Factor Manual (CFM) 	Integration of operational (volumes), finance (expenditures) and HR (FTEs) data to deliver activity-based costing of POE operations; supporting resource allocation planning, forecasting & budget activities and POE to POE comparative analyses.	Comptrollership - TO ISTB - EAIM	Initial phase complete
<ul style="list-style-type: none"> Resource Allocation Model (RAM) 	A methodology of allocating resources for functional activities based on a given workload, performance level and risk, and direct and indirect costs.	CB - AC Programs Ops	In progress
eManifest	Support for one hour refresh of key data sources for targeting, and risk assessment analysis as well as the ability to evaluate the operational performance of these functions.	Programs - CP ISTB - CPP	In progress – Fall 2016 project closure
Temporary Resident Biometrics Program (TRBP) Reporting	Statistical reporting pertaining to the biometric verification of temporary residents requiring visa to enter Canada.	Programs - TP ISTB - TPP	In progress
Generic Passage Flow (GPF)	The GPF project will implement a next generation architecture for managing the traveller processing continuum using a unified, cohesive, zone based architecture to manage the end to end process for all modes of transport and all types of ports of entry	Programs - TP ISTB - TPP	Early phases
Enterprise Risk Assessment Support Service (ERASS)	A business service encompassing the search for information in support of risk assessment for all entities (e.g. travellers, trade chain partners, related parties, etc.) other than commodities.	Programs - TP ISTB - TPP	In progress



Business Intelligence (cont'd)

Initiative	Description	OPI	Status
SAP Business Warehouse (BW) / Business, Planning & Consolidation (BPC)	Extraction of CAS data (CRA platform) to a CBSA financial data warehouse to support financial reporting and analytics, as well as the ability to integrate top-down/bottom-up planning, forecasting and budgeting activities (replacement of COMPASS and SFS).	Comptrollership	Launch in Q1 2016-17
CBSA Assessment and Revenue Management (CARM) Project	A large, multi-year project to transform how the CBSA assesses, collects, manages and reports on import revenue and trade information.	Programs - TADP ISTB - CARM	Procurement planning in progress
Entry/Exit Reporting	Statistical summary report of all travellers passage records contained in the CBSA's repository of entry records and exit records (Entry Exit Information System [EXIS]).	Programs - TP ISTB - TPP	Phase 2 in progress
Electronic Travel Authorization (eTA)	Reporting on new eTA functionality being implemented in IPIL air.	Programs - TP ISTB - TPP	Launch in Sept 2016
Interactive Advanced Passenger Information (IAP) Reporting	Reporting of Advanced Passenger information for compliance and targeting purposes.	Programs - TP ISTB - TPP	Phase 2 in progress
Mobile Primary Inspection (MoPIL) Reporting	Statistical reporting and system performance of hand-held wireless devices used to perform Primary Inspections of travellers.	Programs - TP ISTB - TPP	
Single Window Initiative	Providing the ability to report on various components including: receipt of inbound data from Importers and Brokers, use of hosted participating government agency or department business rules to determine recommendations, receipt of PGA recommendations, execution of exams, transmission of outbound Notices to trade chain partners, and Web metrics for Outreach page hits.	Programs - CP ISTB - CPP	In production
Trusted Trader	Providing ad-hoc and BI capabilities to analyze the Partners in Protection (PIP) program including system utilization, registration/activation, membership application lifecycle as well as the ability measure and monitor the execution and impact of business processes improvement.	Programs - CP ISTB - CPP	
Radio-frequency identification (RFID) Reporting	System performance of RFID readers installed in Primary Inspection lanes used to automate the retrieval of traveller identification documents.	Programs - TP ISTB - TPP	In progress – release management
Interdiction & Border Alert System (IBAS) Reporting	Providing replacement reporting functionality for the decommissioning of FOSS, including CSIS Lookouts, TUSCAN lookouts and Lost, Stolen and Fraudulent Documents (LSFD).	Programs - EIP ISTB - EAIM	
Refugee Reform Reporting	The acquisition of Detention and Removal statistics from CIC to support Immigration Enforcement analytics.	Programs - EIP ISTB - EAIM	



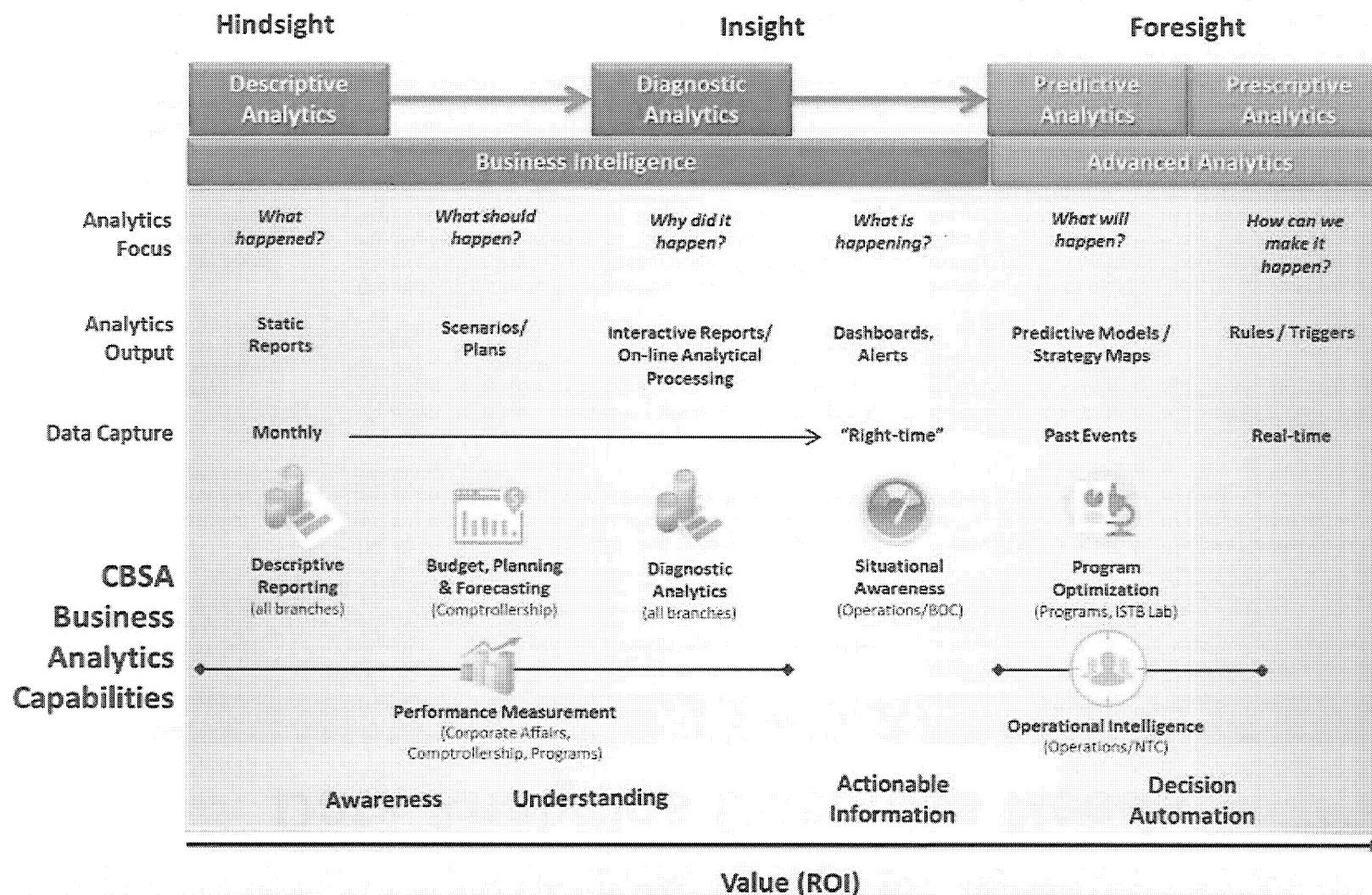
Data Analytics – Diagnostic and Next Steps

- **Business Capabilities.** The Agency is working towards establishing key business capabilities to respond to data analytics needs (*see Appendices A through C*).
- **Integrated Performance Reporting.** Business Intelligence initiatives are still very much “siloed” efforts, but a new Integrated Performance Reporting (IPR) initiative is bringing together all branches in a collaborative effort (*see Appendix D*).
- **Business Case and Action Plan.** A Business Case and multi-year action plan are being developed to support an enterprise approach to managing investments in data analytics (*IMC/EC: May-June 2016*).



Data Analytics Capability Map

Appendix A



PROTECTION • SERVICE • INTEGRITY







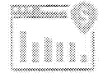
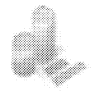
Data Analytics Business Needs

Appendix B

	Capability	Description	Outcome / Benefit Realization
	Operational Intelligence (Operations/NTC)	The ability to dynamically perform tactical targeting of travellers and commercial shipments against multiple sources of data in near real-time.	Improved interdiction of non-admissible travellers & commercial goods before they arrive at the border (pushing out the border).
	Situational Awareness (Operations/BOC)	The ability to harvest, visualize, and disseminate operational and 3rd party information in near real-time as it relates to border operations (e.g. border traffic, use of force incidents, pandemics, etc.).	Improved ability to react (anticipate) to real world events as they unfold to protect and secure Canada's borders as well as improved border efficiency.
	Program Optimization (Programs/ ISTB Lab)	The ability to exploit advances in technology, new analytical techniques and new sources of information (e.g. open source) to continuously improve program design and guide transformation efforts.	Improved efficiency and effectiveness of core CBSA business processes (finding better and new ways to meet strategic objectives).
	Performance Measurement (All Branches)	The ability to dynamically answer three fundamental questions regarding key business processes that affect organizational performance: #1 "How are we doing?", #2 "Why did that happen?" and #3 "What should we be doing?"	Improved Agency performance, by ensuring everyone is working towards the same goal (mapping strategic objectives to bottom-up needs). The ability to understand the performance implications of management decisions (strategic and tactical) and employee efforts (operational).
	Budget, Planning & Forecasting (Comptrollership)	The ability to provide flexible reporting and analytics of financial and HR data as well as conduct top-down and bottom-up integrated plans, budgets and forecasts for efficient management of CBSA resources and future resourcing demands.	Efficient management and utilization of CBSA financial and HR resources. Reduction of risk due to effective planning and anticipation of future needs. Improved business agility (through timely access to reliable information) to support fact-based decision making.
	Descriptive Reporting & Diagnostic Analytics (All branches)	The ability to provide access to key sources of information over time for the purpose of managing day-to-day operations as well as gaining a better understanding of CBSA operations over time.	Providing the agency with improved business agility (through timely access to reliable information) to support fact-based decision making as needs arise. Improved turnaround for management, ministerial, ATIP requests for information.



CBSA Analytics Capabilities Diagnostic Appendix C

	Capability	Current Maturity	Actions Required
	Operational Intelligence (Operations)		
	Situational Awareness (Operations)		
	Program Optimization (Programs/ ISTB Lab)		
	Performance Measurement (All Branches)		
	Budget, Planning & Forecasting (Comptrollership)		
	Descriptive Reporting & Diagnostic Analytics (All branches)		



Integrated Performance Reporting

